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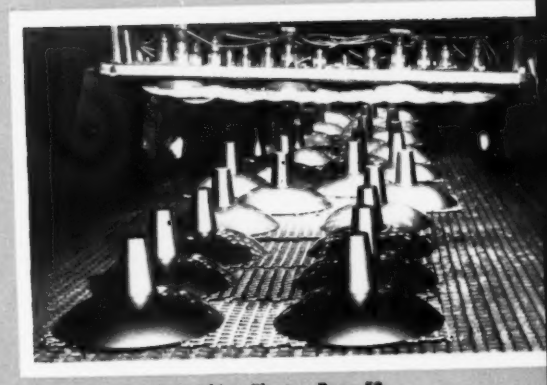

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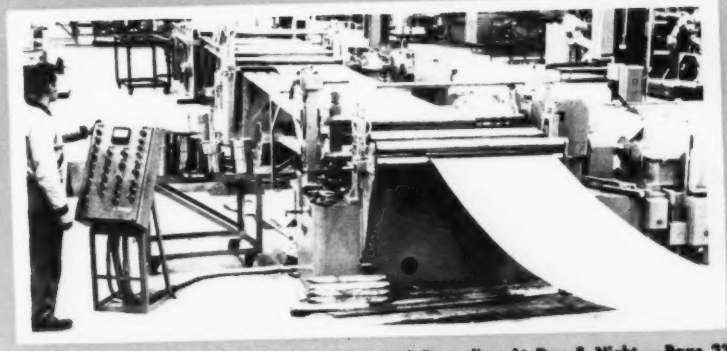

Fabricating And Enameling At Day & Night — Page 23

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Armco Enameling Iron
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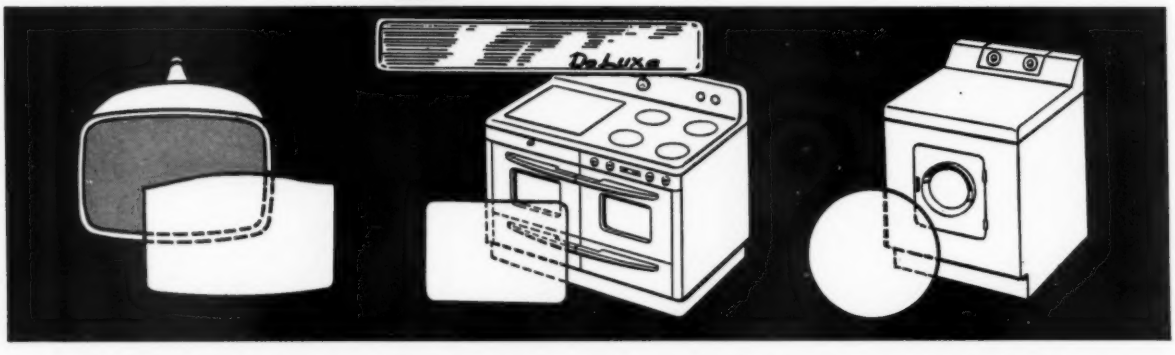

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FROM RAW METAL TO FINISHED PRODUCT

A trade publication devoted to the interests of the metal products manufacturing industry with special editorial attention to home appliances. The editorial scope covers design, engineering, market and statistical information and technical and practical information on plant facilities and all phases of manufacturing "from raw metal to finished product." Free controlled circulation to top management, purchasing, engineering and key plant management and supervision in metal product manufacturing plants. To others, subscription price is $8.00 per year, domestic. To all other countries $10.00 per year (U.S. funds). Single copies, $1.00.

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INDUSTRY MEETINGS

APPLIANCES

Institute of Appliance Manufacturers' Annual Convention and Exhibit, Netherland-Hilton Hotel, Cincinnati, Ohio, June 1-4, 1958.

NEMA

National Electrical Manufacturers' Association's Major Appliance Division Convention, Ponte Vedra, Fla., June 2-4, 1958.

MATERIALS HANDLING

National Materials Handling Exposition & American Society of Mechanical Engineer's Conference on Materials Handling, Public Auditorium, Cleveland, Ohio, June 9-12, 1958.

AUTOMATION

4th International Automation Exposition and Congress, Coliseum, New York, June 9-13, 1958.

OIL HEATING

Oil Heat Institute of America, Inc., Convention and Exposition, New York City, N. Y., June 9-13, 1958.

COATED ABRASIVES

Third National Coated Abrasives Machinery Show, Product Engineering Building, Behr-Manning Co., Troy, N. Y., June 10-13, 1958.

HOME FURNISHINGS

International Home Furnishings Market, American Furniture Mart and The Merchandise Mart, Chicago, June 16-26 and June 16-27, 1958, respectively.

MATERIALS TESTING

American Society for Testing Materials Annual Meeting, Statler Hotel, Boston, Mass., June 22-27, 1958.

HEATING, REFRIGERATION

American Society of Heating and Air-Conditioning Engineers, Inc., and American Society of Refrigerating Engineers Joint Meeting, Leamington Hotel, Minneapolis, Minn., June 23-25, 1958.

HOUSEWARES

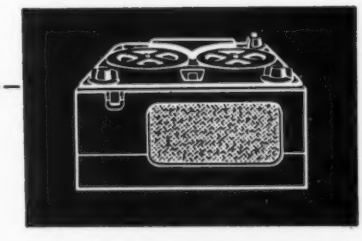
National Housewares Manufacturers' Association's 29th National Housewares Exhibit, Atlantic City Auditorium, Atlantic City, N. J., July 7-11, 1958.

MACCO BLU-COAT

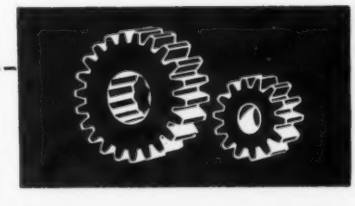
– the ideal between-operation rust proofing solution –

PREVENTS RUST

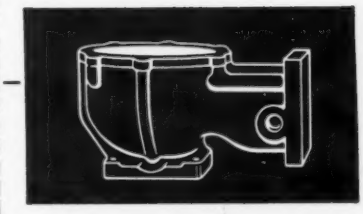
RECORDER precision parts are being given the Macco Blucoat Rust Preventive treatment by one of the nation's leading electronic manufacturers.



GEARS, cut, ground and tempered, are treated with Blucoat to prevent rust during storage, shipping, and assembly.



CARBURETOR bodies and large engine castings being treated with Macco Blucoat to prevent rust after machining and during storage.



AUTO bodies of some of the world's largest body manufacturers are given the Blucoat treatment to prevent rust after drawing or machining.

5 Reasons for
BLUCOAT'S NATIONAL ACCEPTANCE

Macco Blucoat is the amazingly efficient rust preventive used by leading metal processors and fabricating manufacturers everywhere. Endorsed as the only practical method of preventing rust between production operations and assembly—and during transportation and storage.

1. Water soluble—economical, yet extremely efficient.
2. Adaptable to an almost unlimited variety of applications and conditions.
3. Works equally well on steel, cast iron, forgings or die castings.
4. Leaves no oily film. Assures better adhesion. Collects less dust, chips, etc.
5. Blucoat has withstood perfectly a salt spray test of more than 80 hours. Vastly superior to soluble oil. Non-poisonous. No alcohol. Extremely stable.

For the prevention of rust, Blucoat positively has no equal. Whether for the finest of automobile bodies or simply bale tie-wires, Blucoat's versatility makes it most indispensable for any processing plant.

Write today or call a Macco sales engineer

MACCO PRODUCTS COMPANY

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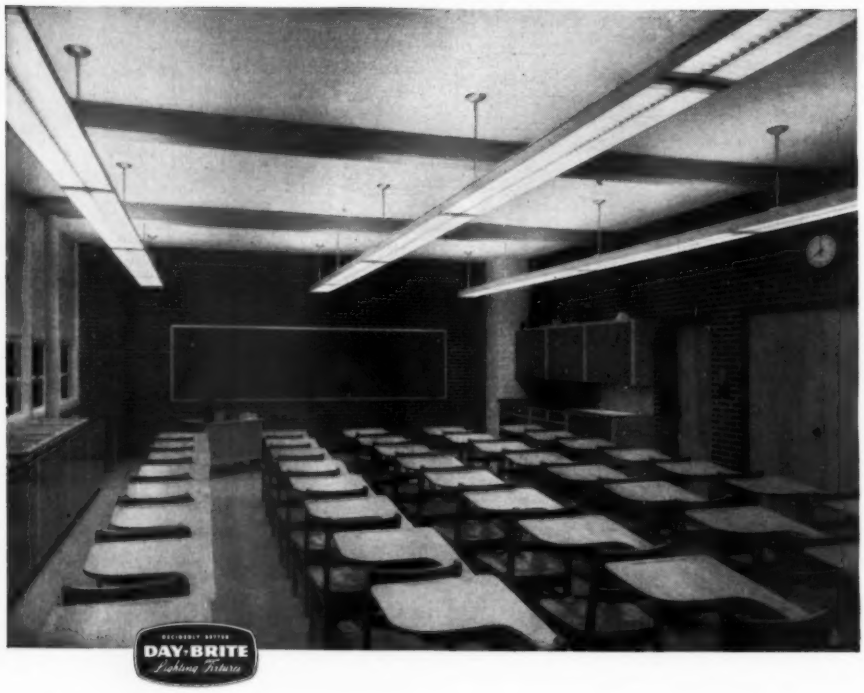
Operator at Day-Brite plant is lathe-cutting fixture stems fabricated from Youngstown Cold-Rolled Sheets.

Accent on excellence

Youngstown hot and cold-rolled sheets



Students attending the new, modern Concord City School at Concord, North Carolina, will benefit by the latest developments in Day-Brite higher-intensity school lighting. All areas of the classroom will afford the greatest possible visual comfort—without any annoying reflected glare.

These beautiful, scientifically-designed fixtures, manufactured by Day-Brite Lighting, Inc., of St. Louis, Missouri, are fabricated from Youngstown Hot and Cold-Rolled Steel Sheets. Close quality-control by Youngstown guarantees Day-Brite a sheet of unwavering uniformity that makes possible long, trouble-free production runs—boosts profits, cuts over-all costs.

Wherever steel becomes a part of things *you* make, the high standards of Youngstown *quality*, the personal touch in Youngstown *service* will help you create products with an "accent on excellence".

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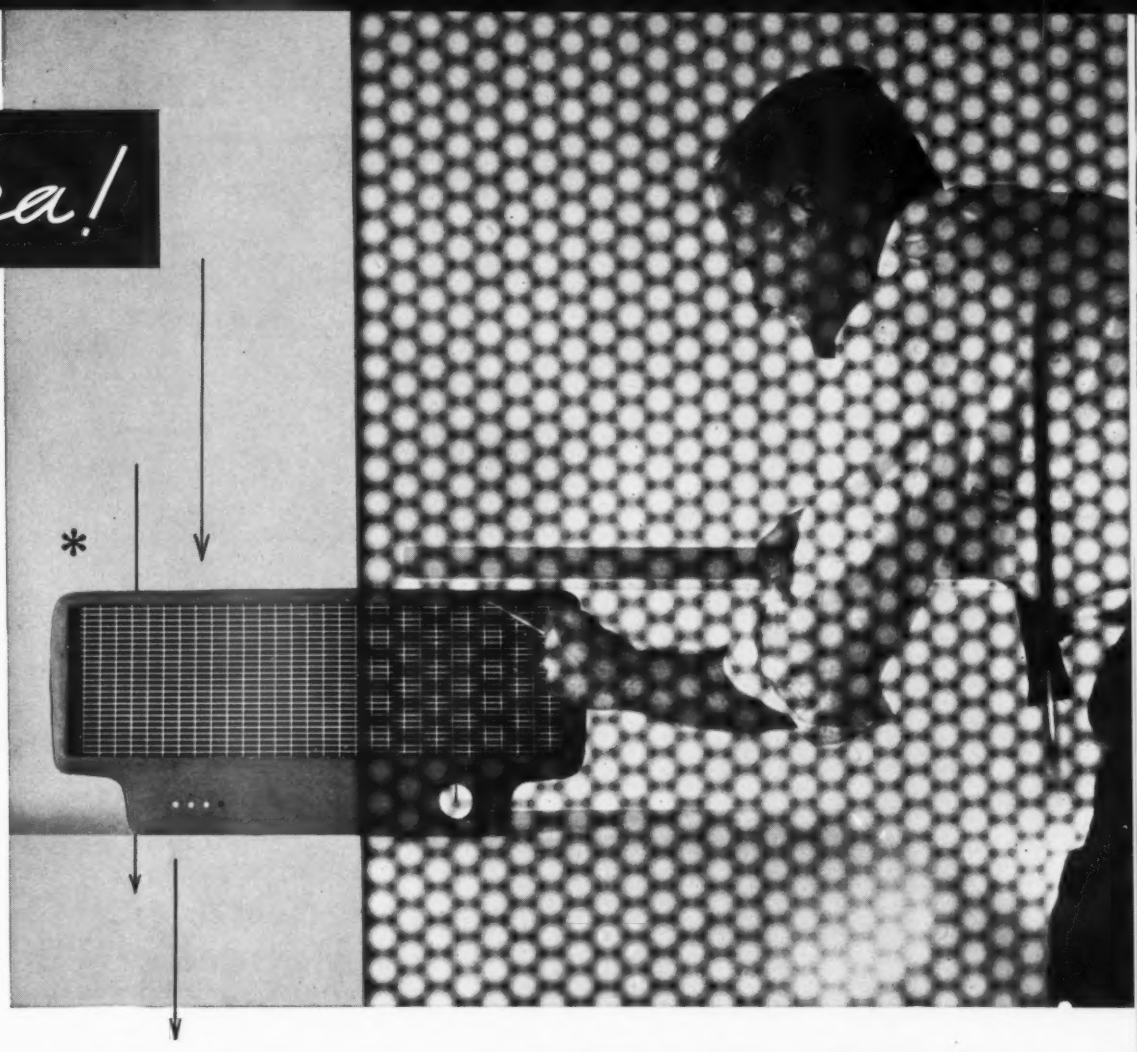


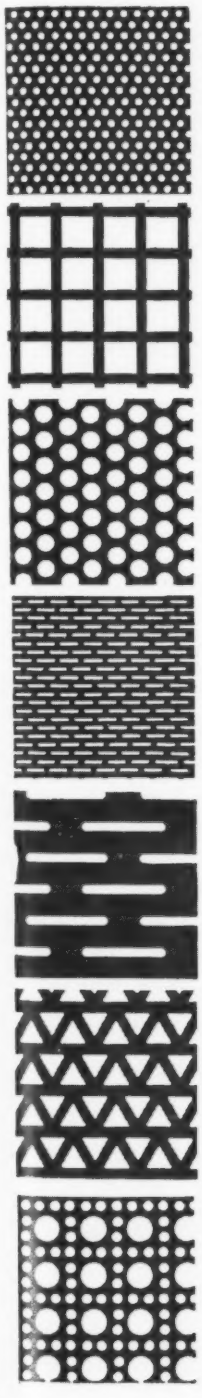
mock-up projects design with H&K perforated metals

Here you see an actual H & K perforated metal grille utilized in a mock-up of a record player. This greatly helps the Industrial Designer project his concepts as H & K perforated metal is now in its proper element for consideration of use and selection of pattern.

By referring to the H & K General Catalog, the designer can select one or more perforated patterns for his project.

H & K perforated metals provide the Industrial Designer, and other men of ideas, a medium of unlimited opportunities for designing better and more attractive products.

H & K sales engineers will be pleased to work with you on your perforating requirements.



A few of the many H & K Patterns available.

The design, pattern and open area for almost every application may be selected from our thousands of perforating dies . . . at no charge for tooling. (If a special design is required, tools will be built to order.)

Harrington & King can perforate practically any material that can be obtained in coils, sheets or plates . . . from foil-thin to 1" thick. Metallic materials—steel, aluminum, stainless steel, brass, copper, monel, zinc, bronze, etc. Non-metallic materials—plastics, wood composition, paper, cloth, etc.

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*Product Development by William M. Schmidt Associates.

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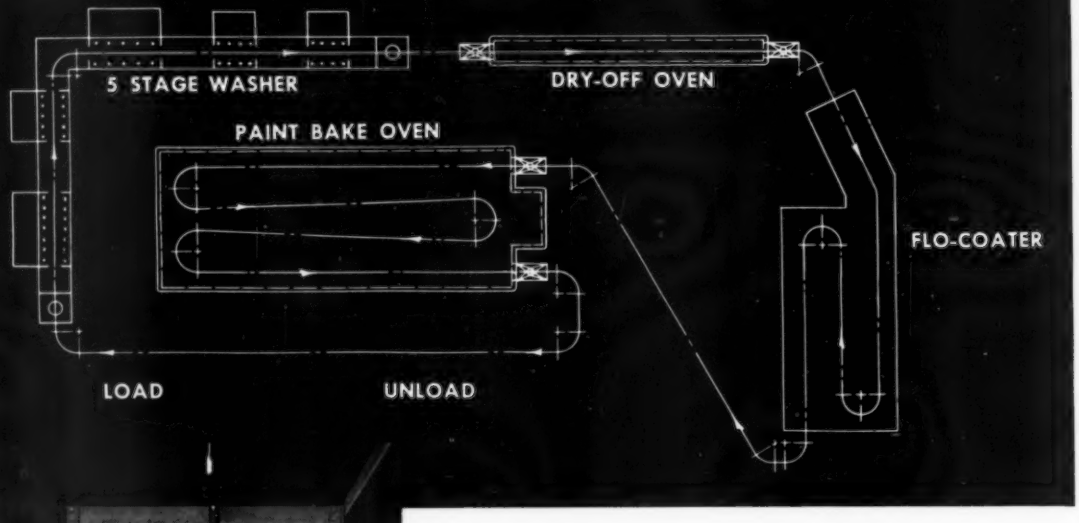
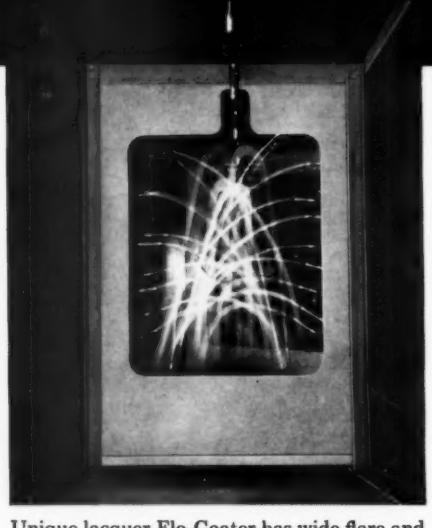
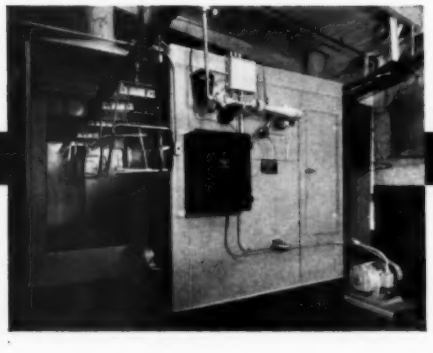




Unique lacquer Flo-Coater has wide flare and long flow path to suit the product—supermarket shopping carts and baskets. Compact MOCO installation gives substantial savings in coating materials over other systems.

Air-jet "curtains" at entrance and exit of MOCO baking oven act as a barrier against heat loss. The system is fully equipped with electronic flame failure safeguards.



Finishing Systems– *Cost Controlled* for Modern Production

Integrated Finishing Systems are more than just a plan and installation designed to meet the customer's needs in materials, space and output. At Michigan Oven, engineering a cost-controlled finishing system means equipping for today's demands, and for tomorrow's production.

The lacquer Flo-Coating system illustrated above is a complete and efficient system. Behind its installation lies a thorough study of the plant, of the product, of quality control and initial investment.

This finishing system will pay for itself in a relatively short time. It's engineered for economy, low maintenance and safety—and it will adapt readily to future expansion at low cost.

Send for a free MOCO bulletin showing typical finishing system applications, including products, process and specifications, or write for the name of the MOCO representative nearest you.

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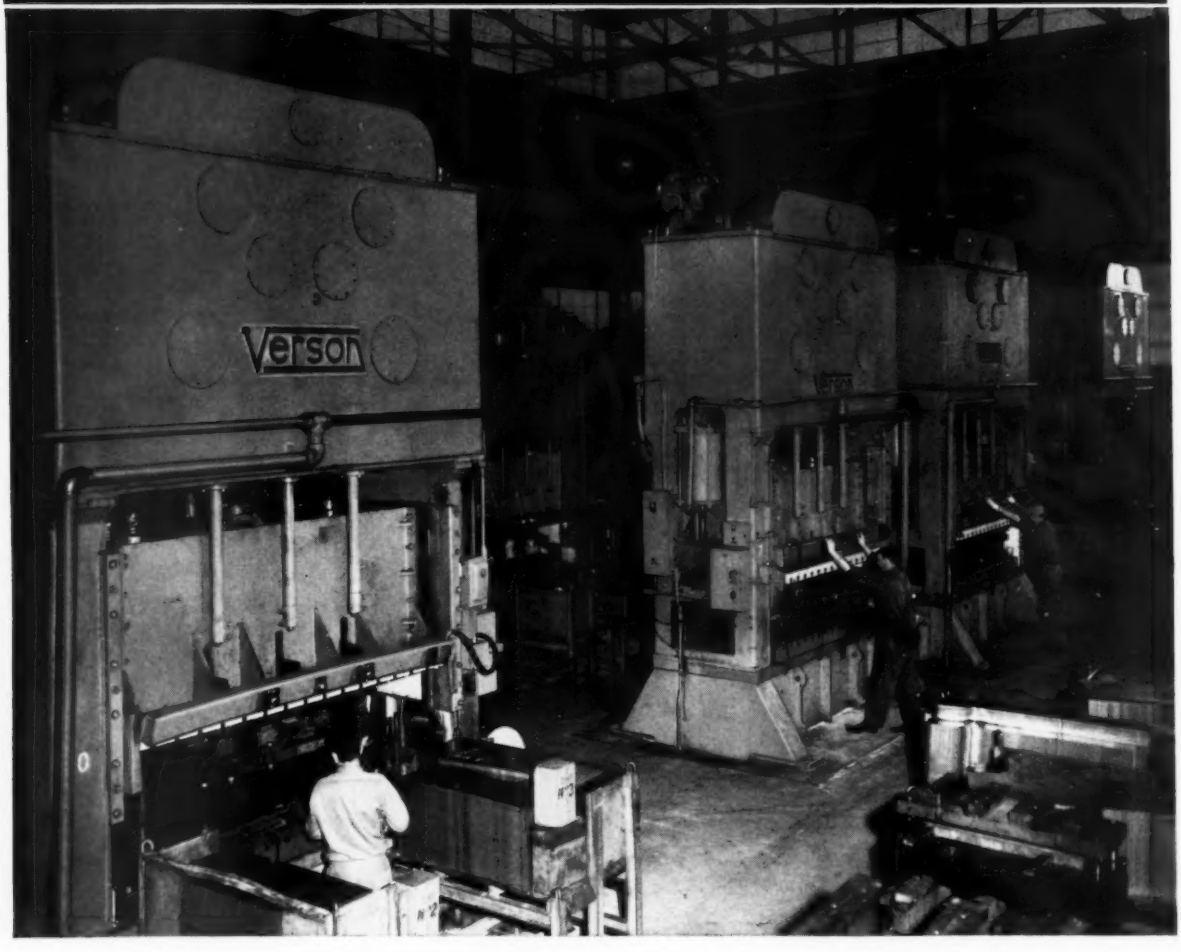

Another versatile production process engineered and developed by Verson

To achieve a more efficient, more flexible metal-working plant, Lobdell-Emery Mfg. Co., Alma, Michigan, recently installed these four Verson 250 ton eccentric presses.

Used as individual units, the machines are employed for blanking, drawing and forming operations on a variety of parts. In operation as a production process, the four units are utilized for the fabrication of station wagon panels. Primary production is on seat backs and cushions and floor panels for a major automotive manufacturer.

The four machines are identical. Each has a capacity of 250 tons with slide and bolster area measuring 48″ x 96″. Operating speed is 25 SPM.

If versatility of operation is one of your aims . . . and more profitable production essential, look into the Verson concept . . . "Anyone can build a press . . . Verson builds production processes."

182

A Verson Press for every job from 60 tons up.

TRADE Verson MARK

ORIGINATORS AND PIONEERS OF ALLSTEEL STAMPING PRESS CONSTRUCTION

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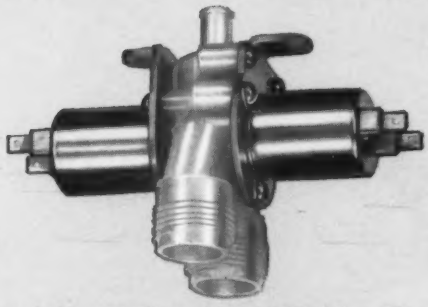
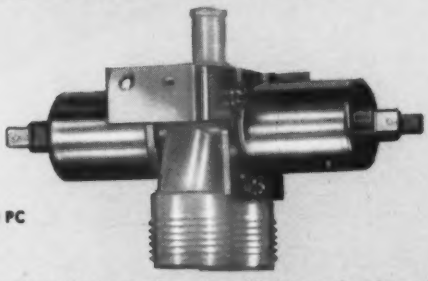
Here are FIVE NEW MEMBERS of the DOLE family of precision control valves



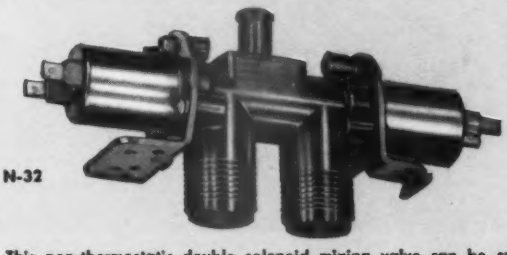
N-10

A new double solenoid non-thermostatic valve with molded integral outlet and incorporating the flow control feature in the outlet. Hot, mixed and cold water is provided.



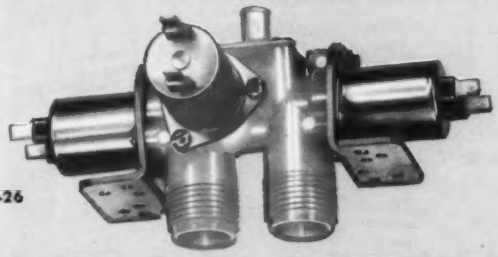
N-10 PC

A two solenoid mixing valve with molded integral outlet and either restrictions or flow controls at each inlet. Provides hot, mixed and cold water. Inlet flow controls give a degree of mixed temperature compensation with varying inlet pressures.



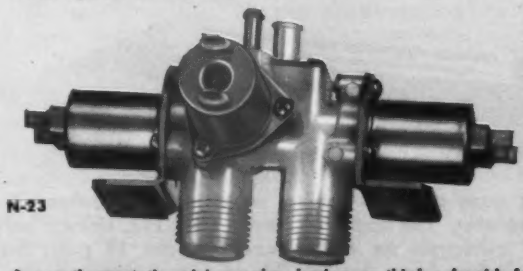
N-32

This non-thermostatic double solenoid mixing valve can be supplied with flow control feature. Provides hot, medium and mixed water.



N-26

A three solenoid non-thermostatic mixing valve, providing control of hot, medium, mixed, cool and cold water. Has flow control feature in outlet and balancing inlet restrictions to compensate for inlet pressure differentials.



N-23

A non-thermostatic mixing valve having a third solenoid for control of cold water to the condenser system of a combination washer-dryer. Condenser water flows from an auxiliary outlet. Water through the main outlet may be hot, mixed or cold. Can also be applied to automatic washers to control water supply and operate a conditioner or detergent dispenser.

Here are just a few of the many DOLE *firsts*

The first thermostatic mixing valve for automatic clothes washers.

We also produced the first non-thermostatic mixing valve for the same industry.

The first thermostatic valve which also provided cold water for washing or rinsing.

We produced the first valve for condenser clothes dryers.

We were the first to offer the economies resulting from the use of molded nylon valve bodies.

The first valves with integral solenoids were produced by Dole.

Dole designed and sold the first solenoid operated valves for combination washer-dryers including in one package control of wash and rinse water and the water needed for the condenser system.

The first solenoid valves for portable dishwashers were Dole products.

Dole designed the first storage type fabric conditioner dispenser.

The first single solenoid valve for economy model clothes washers was a Dole development.

of the DOLE family of precision control valves

Back when the first automatic washing machine was still on the drawing board, Dole designed and built the first practical solenoid valve to turn the water on and off . . . to control the rate of flow . . . and to mix the water to the desired temperature.

For more than 50 years the problems of control have been uppermost in the minds of Dole engineers. And year after year they have been first with new improvements . . . new developments . . . new ways of doing the job better.

Today . . . Dole again leads the field with five new solenoid valves. Each one embodies certain basic, proven Dole principles plus important improvements that contribute materially to the smooth, efficient operation of the machine for which they were designed.

This year . . . as every year . . . you can look to Dole for the solution to your control problems . . . and find it. If you want details about any of these new valves, we'll be glad to supply them.

First with the finest for more than fifty years

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THE MPM spotlight

All-gas kitchens are once again a reality with the introduction of the RCA-Whirlpool gas refrigerator. The Imperial Model EGM-11T, shown here built-in, has the "Ice Magic" automatic ice maker, and provides 11 cubic feet of food storage capacity, including room for 70 lbs. of frozen food in the separate, sealed freezer. Two aluminum shelves slide out to make foods readily available, and the interior and crisper drawers are finished in porcelain enamel.

"STRONG. FIRE-RESISTANT. CORROSION-RESISTANT. THAT'S WHY WE USE WEIRZIN® IN OUR STUD SYSTEMS!"

says G. A. Stevenson, vice president of Penn Metal Company, Inc., Parkersburg, W. Va., maker of PERMALOCK nailable metal stud systems.

"Broadly speaking, our choice of Weirzin electrolytically zinc-coated steel is based on two factors: performance in our products and performance in our production lines.

"With Weirzin, of course, our stud systems have the strength, rigidity and high degree of fire resistance inherent in steel. And because Weirzin's zinc coating is completely integrated with the steel, we have the added assurance of a corrosion-free life for our systems.

"In our production lines, Weirzin goes smoothly through every operation—no flaking or peeling regardless of the severity of the fabrication stresses.

"Briefly, we feel that Weirzin has helped us to produce a quality product that gives our customers solid value at low cost."

Strong! Highly resistant to fire! Highly resistant to corrosion! Easy to fabricate! That's Weirzin electrolytically zinc-coated steel. For more information on Weirzin send for free booklet. Write Weirton Steel Company, Dept. **R-17**, Weirton, West Virginia.

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The strong steel encased, double pane PERMA-VIEW window incorporates the finest quality heat resisting glass. It is mechanically sealed to prevent infiltration of vapors and to eliminate "fogging." This "No-Fog" window meets the constantly growing demand for "visible baking."

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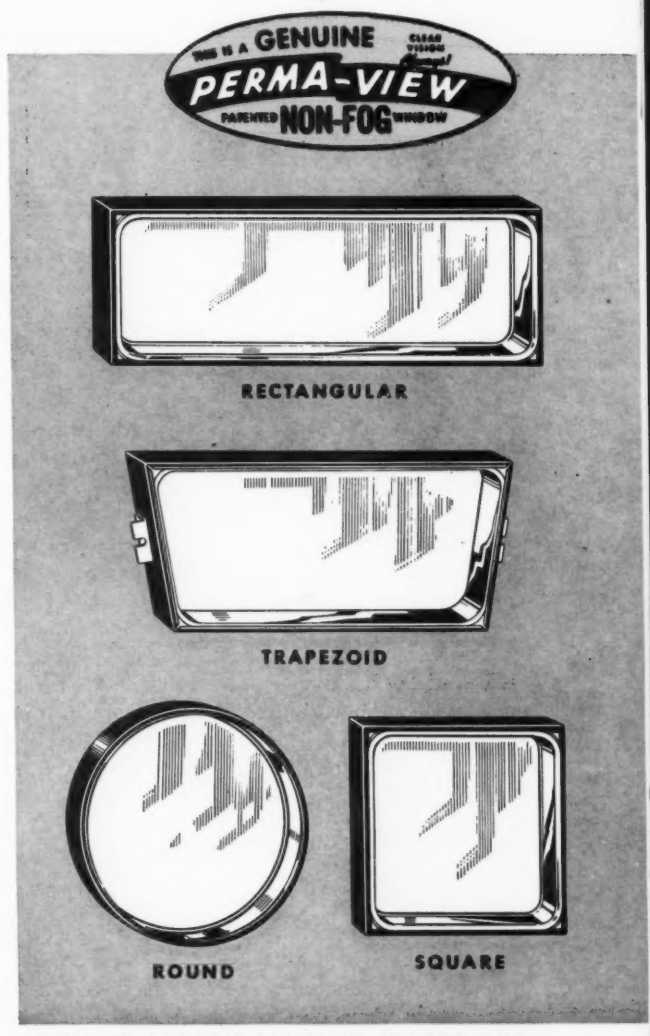

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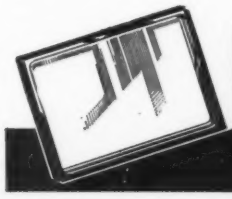

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THE finish LINE

TIME TO STICK YOUR NECK OUT

A GUEST EDITORIAL *by R. O. Eastman*

EDITOR'S NOTE:

Roy Eastman expresses himself in a way that appeals to us, and this is the third time in recent years that a message from his pen has appeared in our publication as a guest editorial.

Eastman's company, The Eastman Research Organization, is a twenty-year-old critical and advisory service to publishers for the development and maintenance of *better readership*. It is characteristic of his policies that the results of field research for publication clients are used solely for publication improvement and may not be used for promotional purposes.

Eastman Research has an enviable reputation for integrity and high purpose. With pleasure we present his thoughts on the current business situation as it relates to the *individual* business.

In a period of recession there are three great fallacies to be reckoned with.

The first is that it is a *general* business recession, something that sweeps across the country like the Asian flu, and that little or nothing can be done about it until it runs its course. In a measure this is true, due to the much greater interdependence of businesses, large and small, than ever before; due also to the far-reaching impact of such giant businesses as the automotive and steel industries.

Still there is no such thing as general business, or a general business recession. General business is nothing more nor less than the composite of all the individual businesses of the country. Therefore, your recession, if you choose to have one, is your own indvidual and personal affair.

Thus the extent and intensity of a "general" business recession depends, in the last analysis, on what the individual businesses do. And that means what *you* do about it.

Business progress and sales volume

A second fallacy is the conception that business progress is to be measured strictly by sales volume, and that sales volume must consistently and continuously exceed that of the previous year. Yet few businesses, large or small, have ever had such experience.

The third fallacy is that government spending is the most effective way to retard or alleviate a general business depression. Never forget that the money the government spends is *your* money, and that if it has to be spent you could do a much better job with it by spending it for yourself.

Now what does this add up to? We say it's time to stick your neck out. Forget about "general" business conditions, and concentrate on your own business and your own opportunity.

For every business recession offers opportunities to those who are smart enough and courageous enough to take advantage of them.

Opportunity — mend your fences

The first, perhaps, is the opportunity to mend your fences, to do those things within your organization you know you should have done but haven't had time to do. That's business progress of the most important kind. Strengthen your organization rather than weaken it. Improve your products and your service.

You say that costs money. Sure, but not as much as can be piddled away through inaction and deterioration.

Then what about sales? Less money being spent in your field? Then your job is to get a larger share of the smaller volume to stay even with the board.

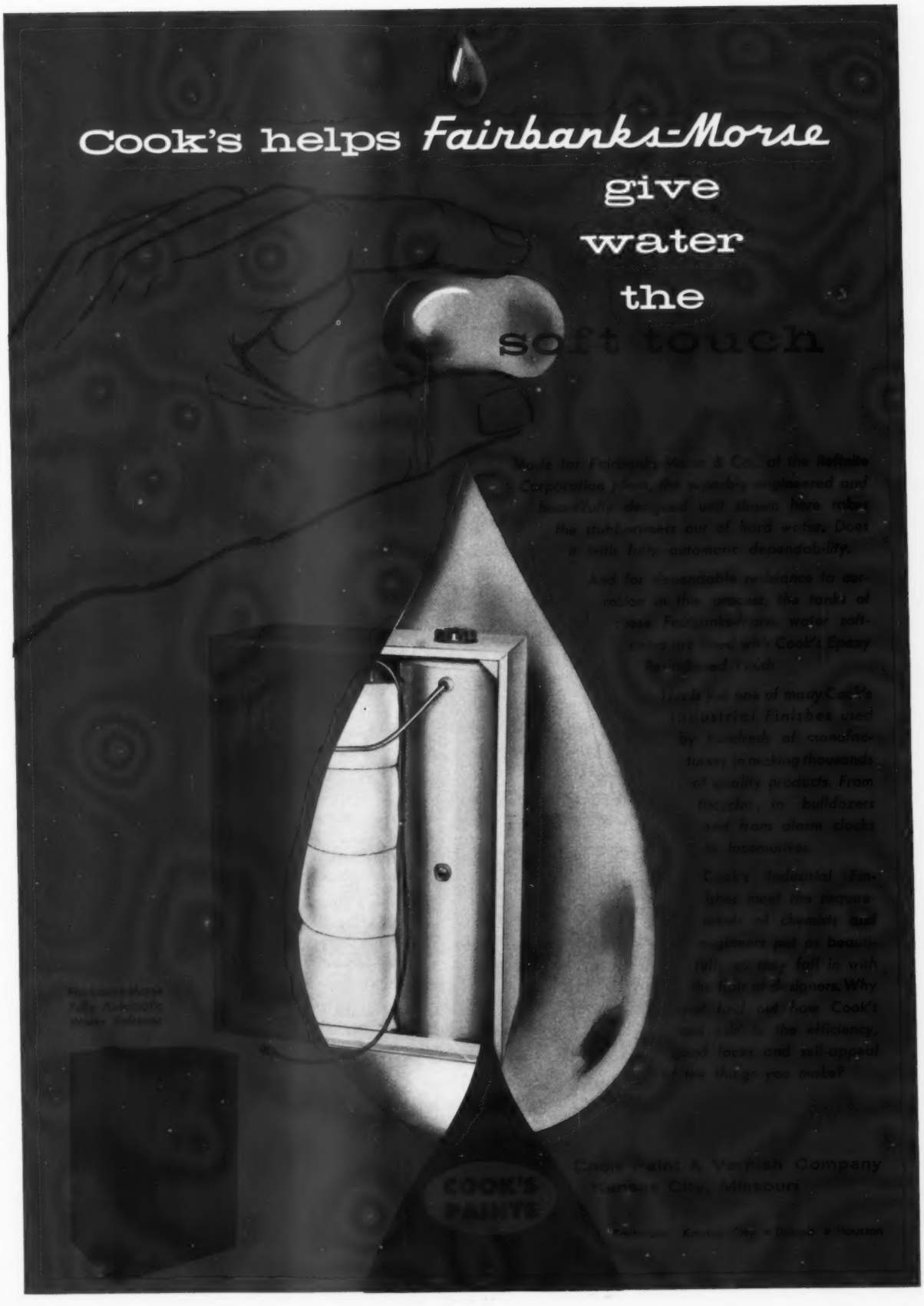
That's easier to say than to do, you answer. But in a decline it *can be* even easier to do.

Every industry has its weak sisters. They are not necessarily the smaller businesses that are hanging on by their teeth, either. They're the ones who are weak in spirit. They are sitting tight waiting for the storm to blow over. They retrench. They fire their salesmen. They cut down on their advertising. In short, they pull their necks in and their customers are on their own.

Good time for you to make hay while the sun isn't shining. Much of what you gain, you'll keep.

There are thousands of businesses today that don't know there is any general recession except for what they read in the papers. Yours can be one of these.

It's time to stick your neck out.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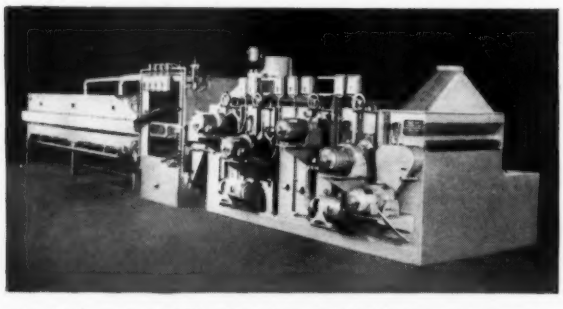
"Go automatic" with a continuous high-speed drawing-lubricant system from Pennsalt. You'll get superior drawing from lubrication that is always exact . . . high production rate with no interruptions from raw stock to press bed.

Pennsalt automatic systems eliminate chemical waste, provide clean working area, reduce excessive handling . . . and compact design saves valuable floor space.

Only Pennsalt offers you the unmatched surface preparation gained by complete chemical and mechanical control. Metal processing machines and chemicals are tailored to your requirements . . . *and to each other* . . . for unequalled *system* performance. And Pennsalt nation-wide technical service stays on the job after installation and start-up to be sure you continue to get the same trouble-free performance.



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White-Roth metal preparation machines . . . exclusive from Pennsalt . . . for automatic cleaning of stock, application of undercoatings and lubricants, and drying. Automatic loading and unloading available.

Pennsalt's complete line of metal processing chemicals . . . including Drawcote®, the outstanding *dry* drawing lubricant, and famous Foscoat®, valuable in severe draws on heavy stock.

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From the intense cold of outer space to the heat of a jet engine, Stainless Steel is the one metal that will stand up. In rockets, missiles and supersonic aircraft, Stainless Steel resists heat, friction and corrosion, has a high strength to weight ratio and maintains its structural integrity under the most severe conditions.

Specify McLouth high quality sheet and strip Stainless Steel. McLouth Steel Corporation, Detroit 17, Michigan.

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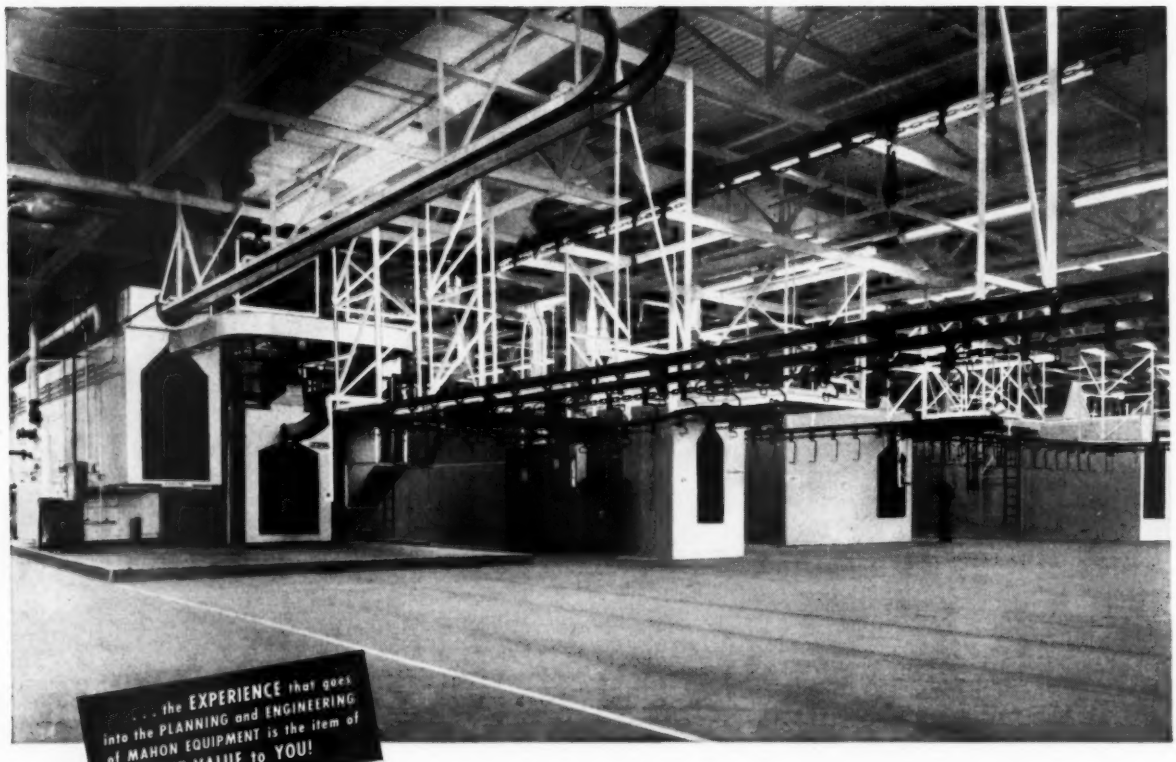
FINISHING SYSTEMS . . .



Complete Finishing System Provides Facilities for Cleaning and Rust Proofing, Drying, Spray Painting Electrostatic Coating, Flow Coating and Finish Baking!

The illustration above shows part of the Complete Mahon Finishing System installed in a Ford Motor Company plant in Atlanta, Georgia.

This particular finishing system was designed especially for painting hoods, fenders and miscellaneous small parts in an automobile plant.

When you have a finishing problem, or need new finishing equipment, you, too, will want to discuss methods, equipment requirements and possible production layouts with Mahon engineers . . . you'll find them better qualified to advise you on any type of specially engineered processing equipment.

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Engineers and Manufacturers of Complete Conveyorized Finishing Systems; Metal Parts Washers, Metal Cleaning and Rust Proofing Machines, Conveyorized Cleaning and Pickling Machines; Dry-Off Ovens, Cooling Tunnels, Spray Booths, Electrostatic Spray Enclosures, Flow Coaters, Dip Coaters, Finish Baking Ovens, and Paint Stripping Equipment; Core Ovens, Soldering Ovens, Heat Treating and Quenching Equipment for Aluminum and Magnesium; Dust and Fume Control Installations, and Many Other Units of Special Plant and Production Processing Equipment.

See Sweet's Plant Engineering File for Information and Representative Installations, or Write for Catalogue A-658

MAHON

from the Editor's Mail

Avid readers

Gentlemen: Thank you for the item concerning our Fifth Annual Industrial Engineering Conference which appeared in the March edition of METAL PRODUCTS MANUFACTURING. I have already received a number of inquiries as a result of this item; so it appears that your subscribers look over your magazine rather carefully.

I am enclosoing a copy of the printed program for your information.

John A. Ritchey
Conference Chairman
Purdue University
Lafayette, Ind.

A long time reader

Gentlemen: I have been receiving your publication, METAL PRODUCTS MANUFACTURING, since the issue of the first copies under the heading of "Finish" magazine came off the press. They have been most helpful in every way, related to the appliance industry.

Because of a change in my professional interests, the information contained in your magazine no longer serves the same purpose. Therefore, it is with regret that I feel it is only proper to report to you that I should be discontinued from your list of subscribers.

At the same time, I would like to suggest that you mail this magazine to Mr. L. K. Shaul, General Electric Company, 137 Park Ave., West, Mansfield, Ohio.

Thank you again for the help that your magazine has been to me over the years. It goes without saying that it has made and is making a commendable contribution to the appliance industry.

J. L. Holley
District Industrial Heating Specialist
General Electric Co.
Cleveland, Ohio

Wants infra-red reprints

Gentlemen: Would you please supply us with a few reprints of the article entitled, "Infra-Red Heating does many jobs in the Metal Product Field," by John Sincere.

Thank you for your consideration in this matter.

W. Lanchak
Douglas C. Whitaker Co., Inc.
Glenside, Pa.

More on infra-red

Gentlemen: Your February 1958 issue of METAL PRODUCTS MANUFACTURING contained an article of great interest to us. This article is entitled "Infra-Red Heating Does Many Jobs in the Metal Products Field," and was written by John Sincere.

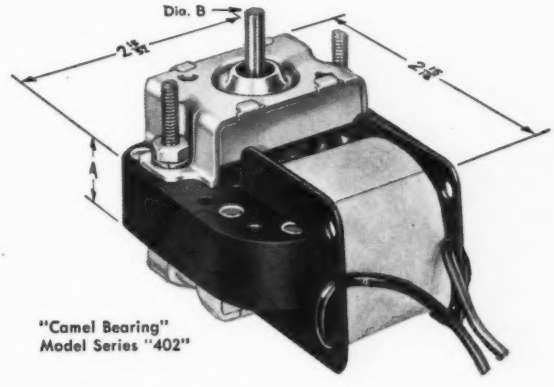
If possible, we are very interested in obtaining three copies of a reprint of this article. Any charges involved may be billed to Pacific Paint and Varnish Company at the above address.

Thank you for your cooperation.

D. W. Homan
Chief Clerk
Pacific Paint & Varnish Co.
Div. of United Wallpaper, Inc.
Berkeley, Calif.

to Page 42 →

SORENG shaded pole motors with CAMEL BEARING design give extra long life service



"Camel Bearing"
Model Series "402"

The "402" Shaded-Pole Motor is built to last. It's a rugged little powerhouse with an extra long life due to its exclusive, Camel Bearing design. This special bearing bracket provides automatic, positive oil circulation even under high temperatures. Oil is constantly feeding into bearing cavities as operating conditions demand. Standard mounting holes make it interchangeable with other motors. Range of 12 models covers all types of applications including spring-wire, gear, chain, rubber belt and friction drives or, to move high velocity, heater or sirocco air. Write for free booklet.

Series "401" for standard life applications — Here's a tough, durable model shaded pole motor that has bearings with self-aligning features and an open-skeleton frame for effective heat dissipation. Choice of 12 models.

DRAWINGS NO'S	402-10 402-11 401-10 401-11	402-20 402-21 401-20 401-21	402-30 402-31 401-30 401-31	402-40 402-41 401-40 401-41	402-50 402-51 401-50 401-51	402-60 402-61 401-60 401-61
VOLTS	115	115	115	115	115	115
FREQUENCY	60	60	60	60	60	60
AMPERE—NO LOAD	0.31	0.42	0.55	0.64	0.97	1.31
WATTS—NO LOAD	13.5	19	24	27.7	40	53
R P M—NO LOAD	3400	3480	3500	3570	3560	3550
MAX. HP. OUTPUT(1)	1/500	1/200	1/125	1/75	1/50	1/40
START TORQUE OZ. IN	0.58	1.4	2.3	2.3	3.3	4.9
STALLED WATTS	18	29	40	45	68	98
STACK WIDTH "A"	⅜"	½"	¾"	⅞"	1-⅛"	1-½"
SHAFT DIA. "B"	0.182	0.182	0.182	0.182	0.2178	0.2178
WEIGHT—POUNDS	0.8	1.2	1.4	1.6	1.9	2.4

NOTES: (1) HP rating at 3000 RPM — continuous duty fan load. (2) All numbers ending in "0" denote clockwise shaft rotation. All numbers ending in "1" denote counter-clockwise shaft rotation.

CONTROLS COMPANY OF AMERICA
Manufacturers of *SORENG* controls
9559 Soreng Avenue • Schiller Park, Illinois
controls that make modern living possible

Better Saws . . .

BEGIN WITH SHARON QUALITY SAW STEELS

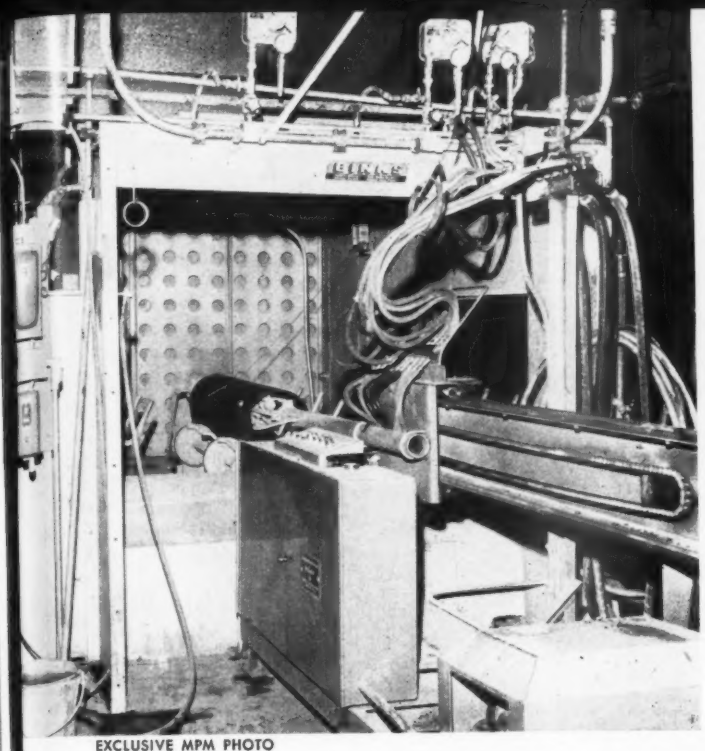
Sharon metallurgists have for the past decade concentrated on the development of better saw steels. As a result, they have established an industry-wide reputation for steels with a balance of toughness and hardness to absorb maximum punishment without fracturing or dulling.

It will pay you to contact your Sharon salesman and get the facts on these durable, edge-holding steels for saws or any cutting tool or implement.

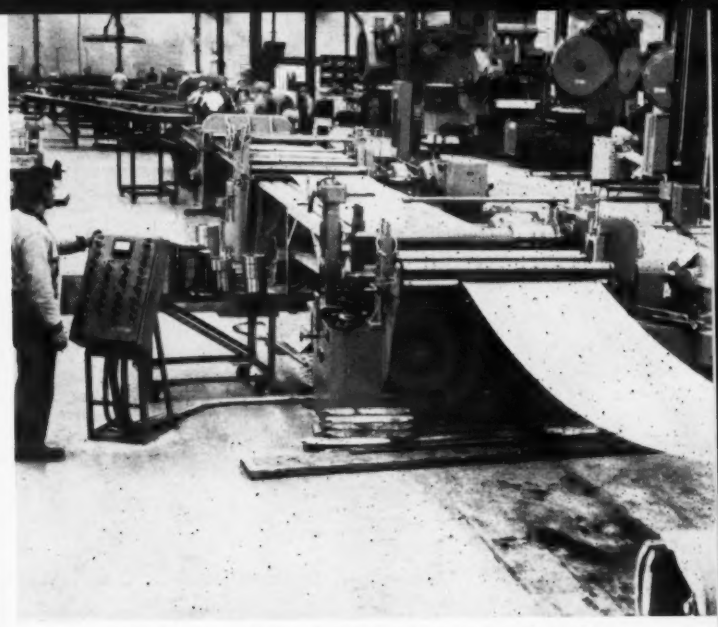
SHARONSTEEL

SHARON STEEL CORP.

SHARON, PENNSYLVANIA



EXCLUSIVE MPM PHOTO



Automatic slitter used for slitting and cutting coil stock.

The automatic water heater tank spray booth. Tanks are automatically positioned on incoming conveyor before entering booth.

New plant features modern fabrication and porcelain enameling facilities

by Gilbert C. Close • WESTERN EDITOR

MPM EXCLUSIVE FEATURE

When plant engineers at Day & Night Manufacturing Company and The Payne Company (both Divisions of Carrier Corporation) were evaluating the layout of the water heater fabrication department and the porcelain enameling department in their new 500,000 sq. ft. plant at La Puente, California, they were fortunate in having a vast backlog of practical experience at their disposal. Thus during the design and layout stages, they could suggest the elimination, modification or replacement of factors or facilities which had proved disadvantageous in the original plant at Monrovia, California, and at the same time could include any advantages which the original plant had possessed. As a result of this, these departments in the new plant exhibit the latest in modern, automated production equipment, along with facilities and techniques which have not been used in water heater production.

The water heater fabrication department and the porcelain enameling department are so well integrated in the new layout that a description of one without the other would leave too much to the imagination. The purpose of this article is to describe the highlights in both departments which have proved themselves particularly useful since the new plant opened in October, 1957.

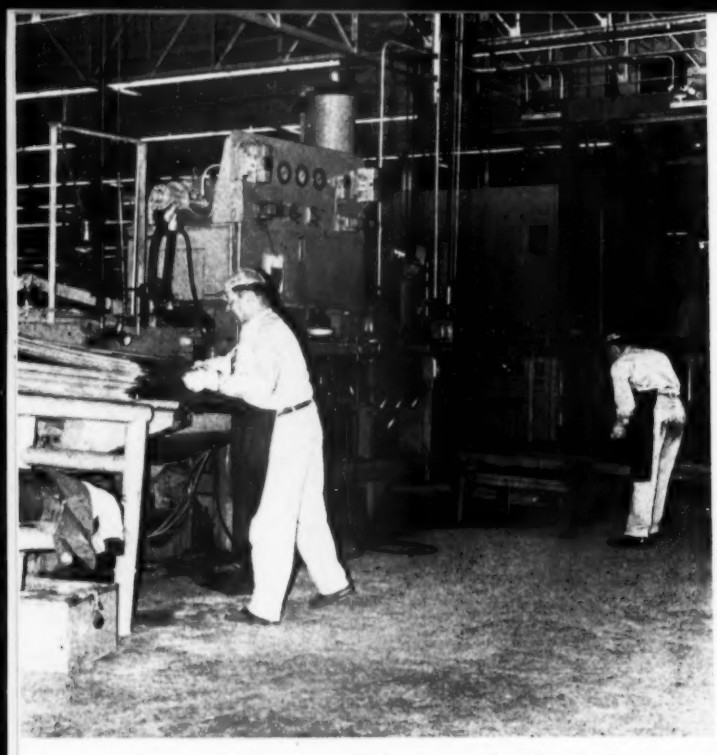
Plant equipped for coil stock

To begin with, all sheet steel raw material used in water heater fabrication (both tanks and jackets) is purchased in coil stock form. Approximately 5000 tons of this coil stock is kept on hand at all times. It has been found that purchasing the steel in coils not only allows more flexible usage with less shearing and trimming waste, but requires much less storage room and is easier to handle in the incoming coil stock form.

An automatic slitter is used to size this coil stock for production line use. The slitter consists of two integrated machines, the first of which slits the steel to the desired width and rewinds the portion that is cut off. The second machine shears the slit strip into the desired lengths. This eliminates all sheet trimming with its necessary waste. One man operates the slitter where four men are usually required to handle the material when it is cut to size in a heavy shear press.

Planishing machine for welds

Production of the water boilers beyond the slitter is very nearly a completely automated process. The slit and sized sheets are fed into rolls which form the tank section. The formed shell moves automatically into an automatic submerged arc welder where the side seam is welded. Beyond the welder, the tank bodies are automatically conveyed to an automatic weld planishing



This combination roll former and submerged-arc seam welder makes initial steps in production of water heater tanks fully automatic. The slit and sized sheet is fed into one end; the welded tank emerges from the other.

EXCLUSIVE MPM PHOTOS

Welded bodies are conveyed from seam welder to automatic weld seam planisher. Operator positions weld seam between planishing rolls. Planishing cycle is automatically performed, then bodies move to body sizing machine.

machine where the welded seams on each tank body are fed between pressure rolls exerting 24,000 pounds of force directly onto the weld seam. This pressure literally mashes the weld into itself, and in so doing cold works the steel and increases its tensile strength. In addition, it relieves all stresses created by the heat of welding and assures a completely smooth and uniform surface for later application of the porcelain enamel coating. The contour of the planishing rolls is such that the bothersome "flat" at each end of the weld seam which so often interferes with head and bottom insertion is entirely eliminated.

After planishing, the shell is full-length "sized." In this operation, the tank shell is forced over a steel plug that is ⅛-inch larger in diameter than the overall diameter of the shell itself. This, of course, stretches the entire shell a minimum of ⅛-inch and makes it truly round so that there are no flat spots or high spots in the steel. According to company officials, this "sizing" to a true round form eliminates the possibility of the tank reforming itself when operating at extreme pressures during its service life, thus causing the glass coating to chip and break.

Cleaning prior to welding head

After the shells have been welded, planished and sized, they are sent through an automatic washer. This washer completely cleans the inside and the outside of the steel shell with an extremely hot detergent wash. This is done to make sure that there is no oil, grease, or other foreign material that will interfere with a sound head weld when the head is installed. After the head has been welded in place, using the submerged arc process, the tank bodies are routed to the blasting machine. Here they meet with the flue-and-bottom assemblies which are produced on a second short sub-assembly line. The tank bodies and flue-and-bottom assemblies are then transferred alternately to the blast cleaning conveyor chain. The transfer is accomplished by an air hoist.

The blasting equipment is a 6-wheel unit, driven by motors totaling 200 h.p. Extremely hard, high carbon steel grit is used for blasting. This type of abrasive has been found well suited, not only for thorough cleaning of all mill scale and rust, but for providing a tank surface etched (or roughened) just right for maximum bonding of the porcelain enamel coating. The company's research department has definitely proved to its own satisfaction that surfaces prepared in this manner provide better bonding than surfaces prepared by the conventional acid pickling operation.

Beyond the grit blasting, both the tank bodies and the flue-and-bottom assemblies are ready for porcelain enameling. A "flake quenched" frit is used in the production of the company's "Jetglas" coating. The milled slip is stored in stainless steel tanks for proper aging. After the slip has aged, it is moved into circulating tanks from whence it goes directly to the spraying line.

Highly mechanized porcelain enameling plant

The porcelain enameling department itself occupies 24,000 sq. ft. of space near the center of the factory building, adjacent to the water heater fabrication facilities. Like all other manufacturing processes accomplished in the new plant, the porcelain enameling facilities embody high production mechanization. The mechanized line which enamels the interior and exterior of the water heater tanks is, in effect, a basic and integral part of the mechanized welding and tank fabrication production line. The body and flue-and-bottom sub-assemblies are picked up at the last welding station by an overhead conveyor, then moved in sequence through the various enameling operations. Throughout the enameling process, the only manual operations required are manipulation of the air hoists that transfer these parts from one conveyor to another.

Let us trace the sequence of operations which follow the blast cleaning, pausing at each one long enough to describe the equipment employed. Both the body and flue-and-bottom assemblies move directly from the blast equipment

to automatic spray booths. The head-and-body spray booth employs an automatic shell lay-down conveyor. Air hoists are used for transferring the bodies from the blast conveyor to this lay-down conveyor. No particular skill is required in this transfer as the bodies will be automatically positioned on the conveyor before they reach spraying position. The automatic spray booth for the flue-and-bottom assemblies employs two turntables. While one flue-and-bottom assembly is being automatically sprayed on one turntable, the other turntable is being unloaded to the furnace chain and then reloaded with another assembly for the spray operation.

Beyond these spray booths, the two assemblies move in pairs on the furnace chain into a direct gas-fired "U"-shaped dryer oven, 12 ft. wide by 11 ft. 6-inches high, by 60 ft. long. This dryer has the capacity to raise the temperature of 11,000 lbs. of steel an hour from room temperature to 350° F. Beyond the dryer, the parts feed into a 9,000,000 BTU/hr. continuous porcelain enameling furnace of the suspended roof "U" type. The entry and exit to this furnace are 5 ft. wide and 8 ft. high. The furnace is equipped with 9 main burners located under the muffle floor and two high sidewall burners. Conveyor travel through the hot zone is 50 ft. The furnace is designed so that another two main burners can be added at a later date. The addition of these two burners will give a hot zone travel of 60 ft. and increase furnace capacity 18 per cent. Present capacity is 11,000 lbs. of steel per hour, to a temperature of 1600° F. The "U" turn wheel in the hot zone is 5 ft. in diameter. Total weight of this furnace, excluding foundations, is 1,075,415 lbs.

Beyond the furnace, the parts enter a 40 ft. cooling zone where the temperature is lowered slowly enough to prevent warpage and distortion which might cause fracture and chipping of the porcelain enamel coating. At this point, after thorough inspection, the two assemblies are returned to the fabrication department for completion.

Final welding and tapping follows porcelain enameling

A specially-built gang tapper unit is employed to cut threads simultaneously in all tank openings. After the threads have been cut, the tanks are automatically conveyed into a washer where all oil, metal chips, and accumulated dirt are carefully washed from the interior by a hot detergent wash. This is to assure cleanliness during welding of the flue-and-bottom assembly. With the flue-and-bottom assembly installed, each tank is given an air pressure test, using 30 psi of air, while completely immersed under water. Specially designed attachment arms on this machine are used to force the empty tank under the water's surface. The inside of the test tank is painted white and is equipped with underwater lights so that any escaping air bubbles will be immediately noticed. After this air test, the water heater tanks are ready for delivery to the final assembly line.

The jackets for the water heaters are produced on another fabrication line, then painted in an electrostatic spray booth. Powered belt-and-slat type conveyors are used along the final assembly line and past the test pits. Beyond this conveyor, the assembled units, already mounted on a crate bottom, move toward the shipping department on a roller conveyor while the crating operation is being finished.

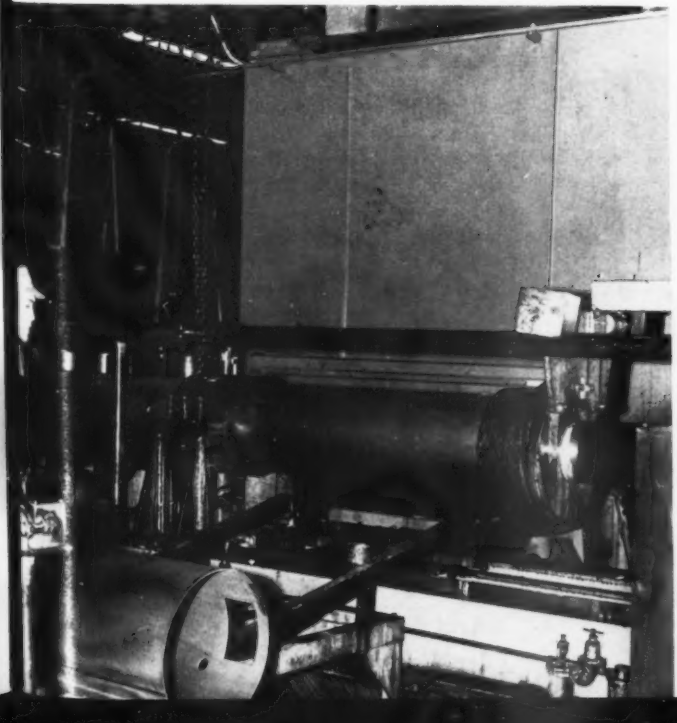
Enameling facilities for high temperature coatings

The porcelain enameling facilities described so far are those used for enameling the hot water heater tanks. Incorporated in this same area is a highly flexible porcelain enameling facility designed to process a complete range of parts, from a great variety of heat exchangers to high-temperature coatings used on jet aircraft engine components. Metal preparation for this facility is usually performed by pickling, except for the high-temperature coating applications that require sand blasting.

The pickle tanks in the pickle room are 5 ft. 3-in. wide, 7 ft. 6-in. deep, and 10 ft. long. Cleaner tanks, cleaner rinse, neutralizer and dryer are of steel construction and are heated by power burners. The sulphuric acid pickle tank, and sulphuric acid rinse tank, nickel solution tank and nickel rinse tank are

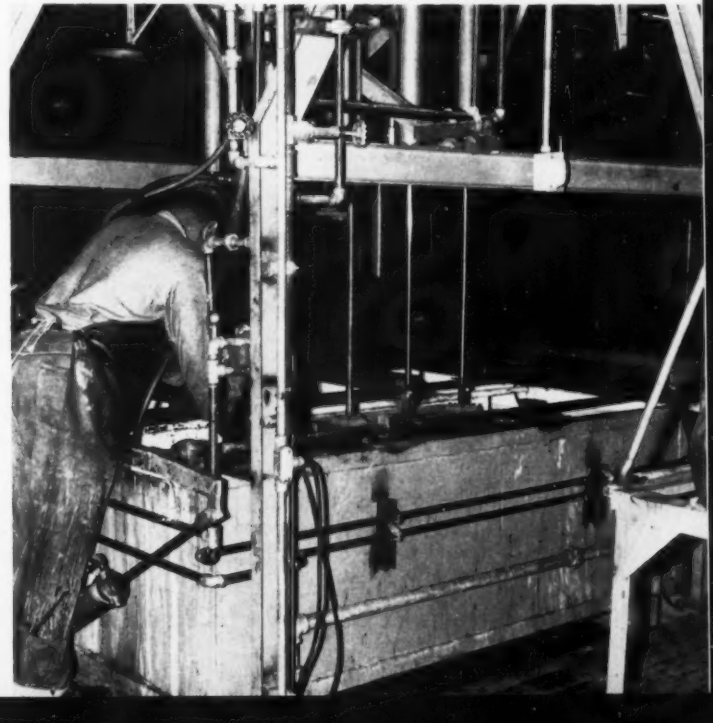
to Page 28 →

Tank body being forced over plug ⅛th inch larger in diameter than itself. This stretches metal slightly, works it to some degree, and results in a body that is round, and which will not "reform" itself under operating temperatures.



Water heater tanks are completely immersed in this water tank for air testing at pressure of 30 psi. Interior of test tank is painted white and equipped with underwater lights so that escaping air bubbles are easily visible.

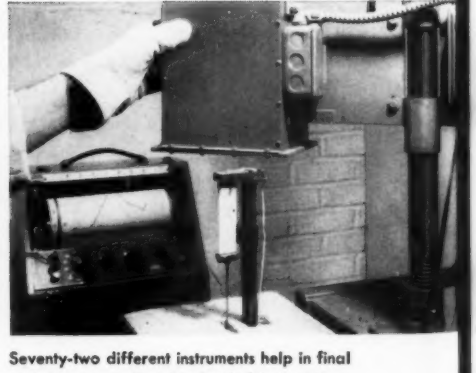
EXCLUSIVE MPM PHOTOS



World's most modern porcelain enameling furnace (but in miniature) permits Ferro engineers to test new frit formulations and firing techniques.

New methods of metal preparation, including a "spray pickling" process, are studied and tested.

Spraying, dipping — even electrostatic spraying — are checked under actual production conditions.



Seventy-two different instruments help in final testing, assure that the finish fits the job.

INCUBATOR for new ideas in porcelain enameling

FERRO

The answer you're seeking may be, even now, "in the lab" at Ferro. And not just in the test tube stage, but being tested under carefully controlled *production* conditions so it will be *right* when you get it.

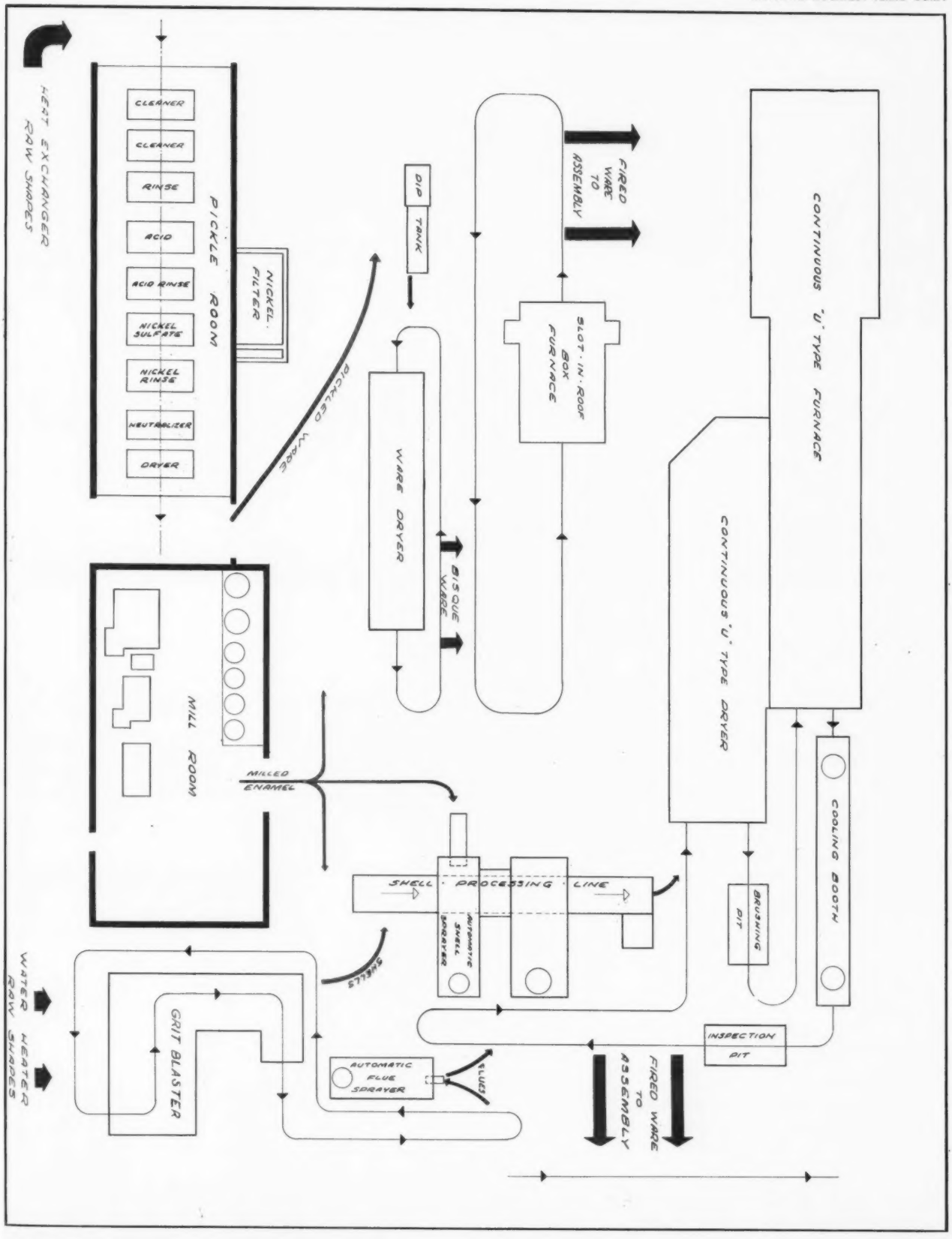
Projects now under way range from adapting a dipping groundcoat enamel for automatic flow-coat operations to the development of new finishes that could well revolutionize the industry in the next few years or decade.

All these facilities and skilled craftsmen (there are 35 of them including physicists and chemists as well as ceramic engineers) are here for two purposes only: To make porcelain enamel *ever more useful* as a finish for industry; and to make porcelain enameling *profitable* for those in the business.

FERRO CORPORATION 4150 EAST 56TH ST. • CLEVELAND 5, OHIO

Porcelain Enamel Process Flow Diagram at Day & Night

DRAWING COURTESY FERRO CORP.



Stainless steel dip tanks are provided for dip coating miscellaneous parts. At top of photo are stainless steel storage tanks from which enamel slip is pumped directly to spray guns.

EXCLUSIVE MPM PHOTOS

→ *from Page 25*

of acid brick construction and heated by lead steam coils. The nickel solution tank is equipped with filtering equipment.

Two stainless dip tanks 3 ft. wide by 5 ft. long by 2 ft. deep are provided for dip coating parts. Each dip tank is portable and is equipped with a recirculating pump, a magnetic separator, and a selenium rectifier. Portable stainless drain boards are provided for draining.

Firing of the ceramic coatings is accomplished in a 6,300,000 BTU/hr. gas-fired box-type porcelain enameling furnace of the suspended slot-in-roof type, using an air seal across the top opening. The inside dimensions of the muffle are 6 ft. wide by 8 ft. high, by 17 ft. long. The furnace has doors at each end, 5 ft. wide and 8 ft. high. Seven power-type burners are located under the muffle floor and are cross-fired. This furnace will maintain uniform temperatures from 1200° F. for decorative finishes to 1900° F. for high-temperature coatings.

Box furnace can be converted to continuous

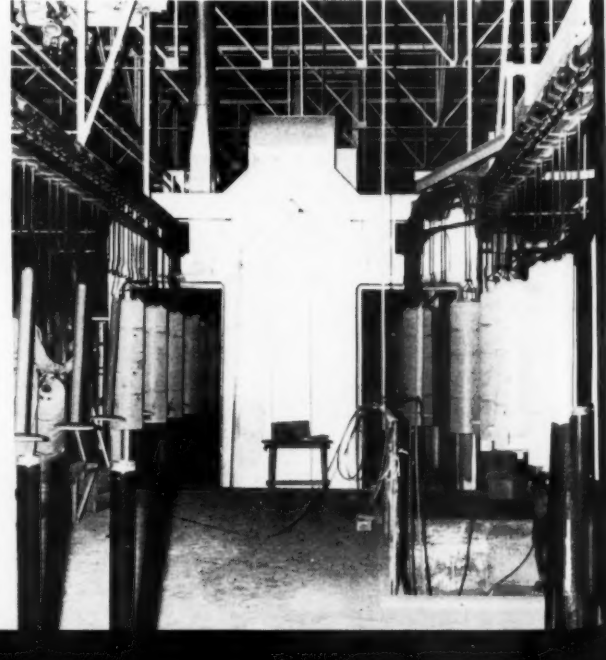
The foundation caissons and floor of this furnace have been constructed to allow the addition of a 30 ft. pre-heat zone and a 30 ft. cooling zone at a later date, thereby making it a straight through, continuous furnace. In the event the pre-heat and cooling zones are added, the doors at each end of the present furnace would not be removed. When operating the furnace as a continuous type, the doors would remain open. For high-temperature work, the furnace would be operated as a batch type. A 48 ft. drying oven which provides an 8-minute dry at 350° F. for the dipped parts is located alongside this large box furnace. Total weight of this furnace, excluding its foundations, is 460,150 lbs.

The enamel slip for the various automatic spray booths and the dip tanks is prepared in a two-story mill room located in the enameling department area. The dry frit is fed by gravity into one of three ball mills — a 2500 lb., a 600 lb., and a 500 lb. After the wet milling operation, always accomplished with de-mineralized water, the slip is dumped into a reservoir and from there pumped into stainless steel storage tanks for aging. From there, the enamel slip is pumped directly to the automatic spray machines by means of a circulating loop system, utilizing stainless steel pipes.

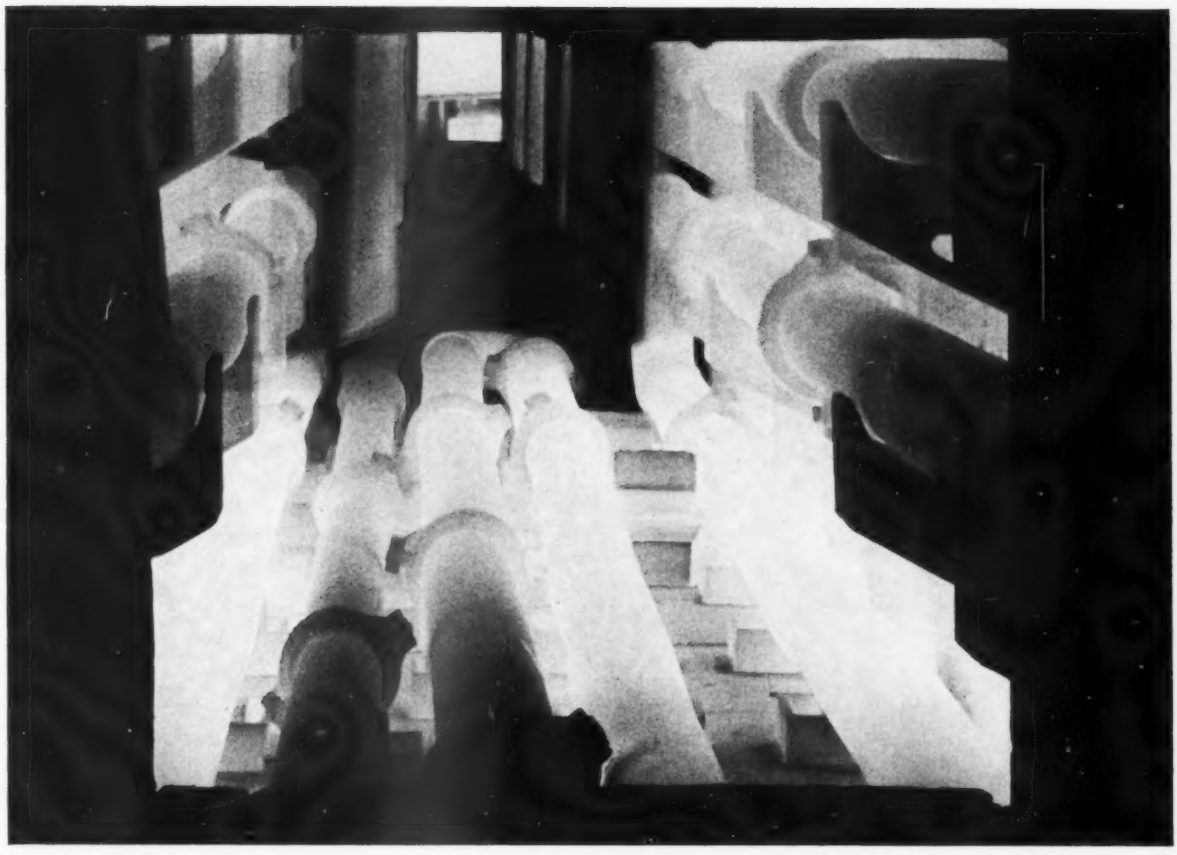
In summarizing briefly, the highlights of this new porcelain enameling department and the adjacent water heater production department must be enumerated as follows: . . . . . (1) Fully mechanized, straight forward material handling throughout, minus any floor storage banks whatsoever, and requiring a minimum of manual handling at the various transfer points. (2) Provisions for future expansion by designing and constructing each furnace so that it can be enlarged at minimum inconvenience and cost when it becomes necessary to do so. (3) The very latest in mechanized production equipment, including the combination roll former and automatic seam welder for tank bodies, the planishing machine for welded tank body seams, and the automatic slitter for cutting desired sheet sizes directly from coil stock. (4) The inclusion of facilities such as the sizing machine for tank shells and the water heater tank immersion air testing equipment.

(See circulation system at Day & Night on Page 62)

Gas-fired box-type furnace used for enameling miscellaneous products. Furnace temperatures can be regulated between 1200° F., for decorative finishes, to 1900° F. for high-temperature coatings. Water heater tanks are fired in a continuous furnace with a hot zone travel of 50 ft.



Here, water heater tanks enter and leave the U-type dryer just prior to firing. Dryer can raise temperature of 11,000 lbs. of steel to 350° F. in one hour.



Wrought Inconel "hot legs" are expected to give radiant U-tubes 4 times the life

These radiant tubes are expected to serve four times as long as conventional tubes; an expectation solidly based on a long-term in-furnace test.

Back in 1951, Newark Stove installed a sample Inconel* nickel-chromium alloy tube in the "hot leg" (*long* sections of U-tubes above) of one U-section. It lasted six years. Best previous life was one-and-one-half years.

As early as 1954, however, it became clear that Inconel alloy could reduce radiant tube replacement by an impressive figure. So Newark made "hot legs" for an entire furnace with Inconel alloy.

The record to date and (as you can see) the appearance of these tubes strongly reinforces Newark's six-year life-expectancy estimate.

Other Savings

Other important savings attributed to the new Inconel alloy tubes include less downtime, 50% lower maintenance and material costs, and reduced furnace heating costs.

4-times-the-life Inconel alloy radiant tubes are secured at Newark Stove Company.

Temperatures run from 1300° to 1500°F

At these temperatures and on up, in many cases, to 2000°F Inconel alloy has excellent resistance to oxidation and corrosion from combustion gases. It also retains high strength and withstands thermal shock. Fabricating and welding properties are good, too.

Inconel alloy may help you improve the service life of your high temperature equipment and fixtures. For help in looking into it, call on Inco's High Temperature Engineering Section. They'll be glad to give you an assist.

*Registered trademark

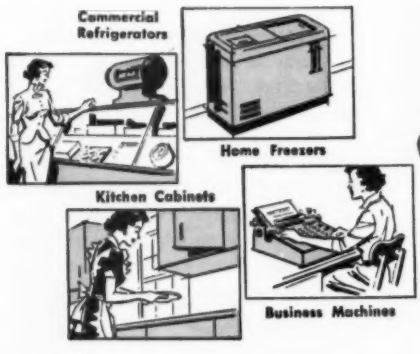
THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

INCO NICKEL ALLOYS

Inseparable—

—sturdily stylish finishes!
—porcelain enamel!
—Pemco Frits and Colors!

Stays "shipshape" with less effort! That's just one of the sales advantages you get with beautiful, durable porcelain enamel. And, for smoother sailing in *your* operation—take advantage of Pemco Colors and Frits. You can just about set your own production pace, and still be sure of uniform results. And, Pemco's wide, wide range of colors always "fit the frit" . . . give you a tried and tested formula. Get the full story on Pemco Frits and Colors . . . plus Pemco's personalized assistance . . . from your Pemco representative.



WORLD'S FINEST PEMCO CORPORATION
BALTIMORE 24, MARYLAND

Manufacturers of "the World's Finest" Porcelain Enamel Frits, Glaze Frits, Coloring Oxides, Screening Pastes, Body and Glaze Stains, Underglaze and Overglaze Colors, Vitrifiable Glass Colors.

RESPONSE TO "WHERE DOES SERVICE START"

(a continuation of "finish line" editorial from May MPM, p. 22)

Dear Mr. Chase:

. . . I shall not pass up the opportunity to express myself in regard to your editorial. I could give a long and involved answer, with all of the facts to substantiate my statements, but I feel certain that the time and interest of your readers is not sufficient to cover the subject in that manner. Rather, I will make the following statement:

No reputable manufacturer ignores his responsibility for the service on the products he produces. If he expects to provide appliances for the American home, he must be prepared to meet the conditions he will find in that market. Any short-range view of this would eventually lead to disaster. Consequently, no reputable manufacturer puts pressure on one-half cent cost reductions only to increase the service problem. Actually, the emphasis is on reducing cost on the non-essential elements in order to spend more money on the critical parts. It has been my actual experience that a good cost-reduction program quite often results in a better overall product.

Appliances, today, are made of better basic materials and better methods of fabrication are used than ever before. Materials are more uniform and, in general, the public receives more for its money than it did ten years ago. We do find a lack of efficiency in our service operations, but we also find a much broader service requirement because of the nature of the appliances today as compared with several years ago.

This is not confined to the appliance business alone. The addition of automatic features has increased the probability of difficulty by an arithmetical progression. My experience with one of the most expensive cars on the market illustrates this point. The mobile mechanism has given no trouble, but the clock, windshield wiper, windshield washer, light relay and similar items have required service attention. Because of the nature of the automobile, I have donated the travel time to and from the point of repair. When it is realized that the travel time of a service man today costs more than the actual time to repair a device, it is not difficult to understand why the cost of a service call has risen to an undersirable level.

All of this is driving home the necessity for improved engineering design; improved manufacturing, which includes inspection; improved packaging and a constant training and upgrading of all levels of distribution and service.

One of the problems in the service area today is that this function has never achieved a high professionl standing. The turn-over is rapid due to an apparent limited future. I believe this is undergoing a change, and service will eventually be looked upon as an honorable profession in which a man can develop a future comparable to that of other professions. Sheer economics will bring this about.

Yours very truly,

John C. Sharp • PRESIDENT
Hotpoint Company

We expect to get together with Mr. Sharp in the near future to discuss the service problem related to cars and appliances. (It is interesting to note the *type* or *source* of service requirements mentioned in this letter.) In the meantime, his message will be in the hands of MPM manufacturer readers. Some very interesting case histories on car and appliance service are coming to our attention, some of which will appear in later issues. Editor

Dear Mr. Chase:

. . . With your editorial on manufacturing for obsolesence very vital to us, this letter is an opportunity to tell why and how our business is somewhat immune to any temptation of trying for a "quick buck."

You have made some important points on squeezing out the last one-half cent in purchasing components, and thus shortening the useful life of a product. It seems to me that any seasoned individual with the responsibilities of general management would disagree with such a purchasing policy. In our particular case, it would be out of the question.

Realizing that every manufacturer thinks his business is vastly different from all others, it is still true that many fundamentals of our business are influenced strongly by the traditions and practices of the plumbing and heating industry. In this industry, for example, you will find both a very strong background and high capability in good down-to-earth service.

As much as the plumber has been the butt of many jokes, it is still true that the local plumbing contractor is still one of the best equipped, best managed and best operated service establishments of our present day. Every product the plumber sells, in fact, must be accompanied by at least some service — such as installation — before the product is useful to the consumer. Also, plumbing codes for the protection of the health of a community insist that a plumber handle maintenance and service work on plumbing products.

With this background of the industry, we feel that no manufacturer whose products are sold to consumers by the plumbing and heating contractor, could possibly maintain his position by lowering standards of quality to the point of forcing obsolescence. We believe the successful plumbing contractors would cease to handle the product of any such manufacturer, rather than multiply their service problems. As manufacturers, we would more than pay for any ill-advised savings with exorbitant cost on service and replacement claims.

It is true that the drive for taking unnecessary costs out

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MARCUS J. AURELIUS

HOMER L. TRAVIS

SEN. CARL T. CURTIS

W. H. LAWRENCE

AHLMA endorses

AN MPM REPORT ON THE ANNUAL MEETING

The American Home Laundry Manufacturers' Association met at Boca Raton Hotel, Boca Raton, Florida April 20-22 for its 42nd annual meeting. Business sessions for the convention were confined to Monday and Tuesday mornings with the afternoons held open for enjoyment of the facilities at the Boca Raton Hotel and Club. General subject for the annual meeting was "The basis for business decision — 1958."

Headliners on the Monday morning program included Senator Carl T. Curtis (R., Nebr.), Member, Senate Select Committee on Improper Activities in the Labor or Management Field — Dr. Walter E. Hoadley, Jr., Treasurer, Armstrong Cork Company — Guenther Baumgart, AHLMA President — and Homer L. Travis, Vice President, Sales, Kelvinator Div. of American Motors Corporation, and Chairman of the AHLMA officers group.

In his talk, announced as "The Nation Today," Senator Curtis emphasized the fact that the "Improper Activities" Committee was for the purpose of recommending legislation and not for the purpose of telling who is right or wrong. He did present a number of pertinent suggestions with respect to legislation.

(1) There must be legislation to cover union accounting, including welfare funds.

(2) The government should not dominate unions. However, unions should be run by the rank and file.

(3) The secondary boycott is "economic blackmail" and should be outlawed.

(4) There is need for a more effective method of controlling the use of union funds in politics.

(5) Anti-monopoly laws protect the public from concentration of power. These laws should also cover unions.

(6) Local governments should be held responsible for local policing. There might be occasions where federal help should be involved when federally financed projects are involved or when "groups" are involved in interstate travel.

(7) Unions should be required to have a form of organization that fixes responsibility on the unions for their acts — the acts of their members and officers.

(8) Union membership should be voluntary and not compulsory.

Strengths and weaknesses

The announced topic for Dr. Walter E. Hoadley, Jr. was "Let's look at the economy's strengths and weaknesses." In the opinion of this speaker, today's situation is not the appropriate time for "pious optimism" or "partisan pessimism." He made the point that almost anyone could be successful in business during the past war boom. The real capability of an organization will show up during the coming months.

Dr. Hoadley posed three specific questions in his presentation: (1) Why are we in a recession, (2) will the bottom be reached soon, and (3) what can we do about it.

In his answer to question number one, Dr. Hoadley pointed out that growth and profits *cannot* be taken for granted, that the generous forecasts made for the future by many will call for a lot of hard work and ingenuity

Among the factors affecting the current situation are excesses during the war, the reaction from inventories, and lack of confidence.

According to Dr. Hoadley, the let-down was inevitable and should not have come as a surprise.

(2) Will the bottom be reached soon? How the people feel has a lot to do with this, and much confidence has been lost during the last six months. On the other hand, the present situation regarding satellites, government actions and the natural seasonal upturn may help to compensate. Commentators, politicians, etc. try to outdo each other with headline making which has had bad effect.

Hoadley feels that shallow pep talks will do no good unless they are based on fact. One important fact is that prices are still at an all time high, to the point where inflation is still a problem. Although unemployment passed the 5,000,000 mark, this is the first time there has been this degree of unemployment and still an inflation situation.

Present income is about equal with past highs; production capacity is ahead of the world, and military might second to none.

Standard forecasts indicate an upturn some time before the end of the year, 1958. Inventories must stop declining; government spending should bolster the situation; and housing is expected to turn up.

(3) What can we do? The economic, political and psychological forces will combine to have their effect, Hoadley stated. The question is, what can *we* do. While the general situation is expected to average high, *it is a question of how to sell more products at present and make more jobs.* It will be a long wait, he said, for those who sit by during this period.

Management must re-evaluate from the *market* approach and not just from the *product* approach. Do we really know what is wrong with our products, he asked. Also take a fresh look at personnel. We can't afford to have the luxury of weak personnel. We must offer better product *value* and stop rising costs.

There's also the problem of obsolescence. We must find consumer complaints and consumer inconveniences. We must then reduce operation and service costs. We must simplify our products in consideration of operation and service costs. *Service is a major roadblock.*

Strong industry manufacturers

Guenther Baumgart, President of AHLMA, told association members that home laundry appliance manufacturers who are in business today are strong. "It is only the marginal producer who leaves the market," he said.

Baumgart suggested that top management give

"Buy it Now" campaign

attention to appliance servicing. He pointed out that while service has been played up as a major problem in the industry, in reality the total major appliances in use today in a typical home are 99.73 service free.

Wanted — creative salesmanship

In his address before the meeting, Homer L. Travis raised the question, "Where is our own industry going?"

He stated that there is a definite relationship between the economic dilemma and the fact that industry has the ability to produce at an all time *high* while creative salesmanship is at an all time *low*.

"*Never*, in the entire history of this country, has there been such a *wide gap* between our means, our technology, for *producing* things to sell, on the one hand — and our *willingness* and *ability* to sell *creatively* the things we produce, on the other hand," said Travis.

"Our industry's future rests only *indirectly* on how we conduct ourselves as company presidents, vice-presidents, purchasing agents, research engineers, production executives, merchandising managers, department heads and suppliers. *Primarily* our future depends on how we act this year and in the years to come as salesmen — *creative* salesmen.

Travis referred to the saturation of electric washers at 88 per cent as being a *plus*, not a negative. He said that history has proved that the higher the level of ownership, the higher the level of sales. Ask yourself, he suggested, how many of the 43 million washers in use today are equipped to keep up with the revolution that is taking place in clothing, in modern fabrics, in wash-and-wear? The answer, he said, is not more than 8 or 10 per cent at the outside. This points to 40 million washers that have been "left behind" by the advance in the clothing industry in the last five years.

As a word of caution, he said it's not the *size* of the market that counts, but it's the *approach*. That, he said, is where home laundry equipment manufacturers can make or break themselves. In suggesting a pattern for the future, Travis suggested:

1. Real production control geared to *ability* to sell — not geared to hopes or promises, and geared to individual company ability to sell — not geared to the competitors.

2. He suggested watching inventories as they have never been watched before — in the factory warehouses and in the field.

3. He suggested (and possibly the most important point) putting sincere, intelligent, concentrated effort behind *creative selling*. Creative selling, as outlined by this speaker, includes sales training, sales tools, sales direction — all fundamentals in creative selling. The mood of the dealer, said Travis, is ripe for real, constructive sales campaigns.

No "bad boys" in AHLMA

At the start of Tuesday morning's program, W. H. Lawrence, National Correspondent for the New York Times, offered an interesting current discussion, and following this, George P. Lamb, AHLMA general Counsel, talked to the group in answer to a question, "Are you bad boys?"

In general, he gave the AHLMA membership a clean slate with respect to adherence to the Federal Trade Commission Act, the Robinson-Patman Act, etc., but advised that each keep an eye peeled to future developments for "fictitious price advertising" and "small appliance bait."

Lamb referred to the warranty situation under which water heaters, for example, are offered with as long as 20-year guarantee periods. He suggested that the industry might look for Federal Trade Commission and Better Business Bureau checks on the 10 and 20 year warranties very soon.

Don't judge the climate by the weather

An upturn in industrial activities during the summer was predicted by Marcus J. Aurelius, administrative president of United States Steel Corporation, and he offered this suggestion: "Don't give up on the economy of the country because we have had some bad weather."

Positive factors cited by Aurelius were the high levels of personal income and savings, reduced business inventories, government efforts to stimulate the economy, and steady gains in consumer spending for soft goods and services.

This speaker said that studies by U. S. Steel's commercial department indicate that automobile manufacturers will produce over 4.5 million cars this year . . . he forecast volume for the construction industry equal to or slightly ahead of 1957 . . . a moderate gain in employment, coupled with an increase in housing starts will, he said, spur appliance sales during the second half of the year. Production totaling approximately 90 million ingot tons is indicated for 1958, according to Aurelius. This would be approximately 12 per cent below the record volume of 1957.

This steel representative said the recession in business activity should have rounded the corner by fall, and that with the upswing, plus a revival of inventory building, the steel industry and the entire economy should end the year on a stronger note.

An industry solution on a national basis

As a logical wind-up for the AHLMA meeting, Judson S. Sayre, President, Norge Div. of Borg-Warner Corporation, presented a charted program covering a national move by all industries and trades in the durable goods field (working together) to create a positive consumer attitude. This, he said, would be far more important than the pump priming, deficit spending, increased national debt, and reduced taxes which might be a part of government action.

to Page 69 →

JUDSON S. SAYRE

DR. WALTER E. HOADLEY, JR.

GEORGE LAMB

GUENTHER BAUMGART

ARMCO

Over 14 years of

ARMCO STEEL CORPORATION
GENERAL OFFICES
MIDDLETOWN, OHIO

MARKET DEVELOPMENT DIVISION

March 7, 1958

Mr. Dana Chase
Metal Products Manufacturing
Elmhurst National Bank Building
York Street at Park Avenue
Elmhurst, Illinois

Dear Mr. Chase:

The fact that Armco has been a continuous advertiser since your publication was started speaks for itself.

We feel that our advertising has not only benefited Armco but has been of definite service to manufacturers. Many of them tell us they have gained definite sales and production advantages by using such special quality materials as Armco Enameling Iron, ZINCGRIP PAINTGRIP, ALUMINIZED, and Stainless Steels which have been advertised in Metal Products Manufacturing.

The numerous inquiries received have also enabled our fabricating, design, and marketing service people to render further assistance to your readers in helping solve many specific marketing and production problems.

Cordially,

R. K. Leedom

Manager
Advertising Department

RKLeedom
ng

SERVING THE *Appliance* AND

. . . MPM is a BASIC advertising buy

# of CONTINUOUS ADVERTISING

The first Armco Steel Corporation advertisement appeared on page 1 of the January 1944 issue of MPM. This was the first issue of the publication. It is interesting to note that both the advertiser and the publication have changed names since that date. Armco was then known as The American Rolling Mill Company and MPM was entitled Finish. Both names have been changed because of growth and to better describe the scope of the company's activities and the publication's editorial services.

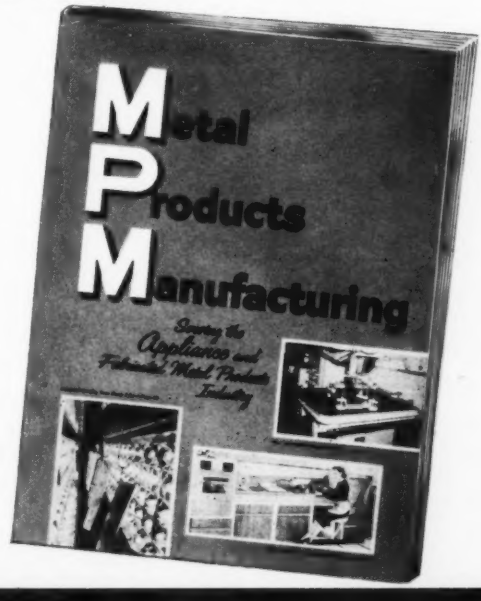
Since that first issue Armco has been a continuous advertiser, with a black and white page appearing in each issue on page 1, a preferred position, in the publication. As Mr. Leedom states in his letter, "The fact that Armco has been a continuous advertiser since your publication was started speaks for itself."

Armco is one of the fifteen basic producers of metal which have come to think of MPM as a BASIC advertising buy. MPM currently provides coverage of over 12,000 key men throughout the volume producing appliance and fabricated metal products industry. Depth of penetration to all key buying factors is provided in 4,056 plants, all of which are engaged in producing a fabricated metal product. MPM circulation is 100% verified under BPA audit regulations.

MPM provides editorial content unmatched by any other magazine in its immediate field. Concentrating its coverage on appliance and fabricated metal products manufacturing, it provides an undiluted diet of important information for its readers. MPM is averaging, currently, 50% more editorial content per issue than the second publication in the field.

It is also important to note that Armco's continuous advertising program in MPM has resulted in numerous helpful inquiries.

Here, again, is additional proof that if you have the right material, equipment, component or service for the appliance and fabricated metal products manufacturing field . . . and present it properly in MPM . . . the men who engineer and build the metal products, plus those who purchase for and manage the producing plants, will respond.



AND FABRICATED METAL PRODUCTS INDUSTRY

Dana Chase PUBLICATIONS

Elmhurst National Bank Building • York Street at Park Avenue • Elmhurst, Illinois

TErrace 4-5280

MPM Suggestion Box

Plastic tooling enters new fields

tooling compounds based on epoxy resins provide reductions in costs and time

THE LIGHT METAL fabricating industry, faced with the challenge of rising costs and sharpening competition, is looking to plastic tooling as a solution of its immediate problems. For some time, plastic compounds based on epoxy resins have been providing tooling at lower costs and minimum downtime in the appliance, furniture, and automotive industries.

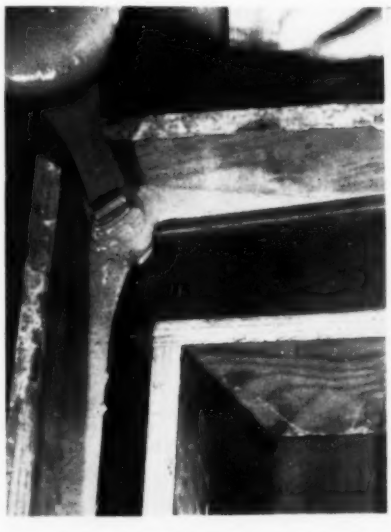
Arvin Industries, Inc., Columbus, Ind., makes a variety of light metal products in the housewares, outdoor furniture, electronic, and automotive fields. Because of the many prototypes involved in its operations, the company is expanding its use of epoxy plastic products. It is also using glass-reinforced epoxy forming dies in production operations, and glass-reinforced epoxy jigs and fixtures for quality control. The epoxy tooling compounds used by Arvin are supplied by Mainland Plastic Industries, Inc., Hazel Park, Mich.

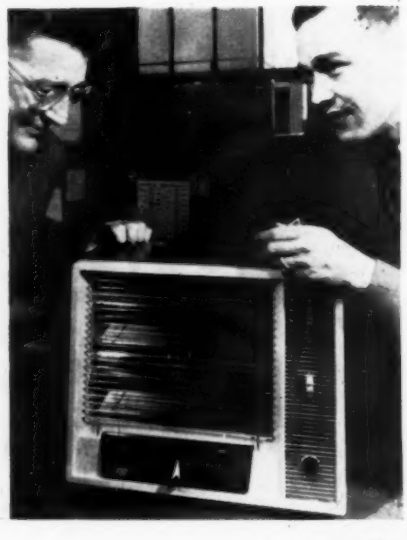
Use of tooling compounds based on epoxy resins has provided reductions in both costs and time, it is stated. Users also say that close tolerances can be held in fabrication, and this dimensional stability maintained throughout the life of the tool. These epoxy resins cure at room temperature, hold tightly to inserts, bond directly to backing structures, and adhere strongly to reinforcing materials.

Epoxy tooling compound can be cast or laid up to the final shape in one operation. Since many conventional finishing and dovetailing steps are eliminated, tooling and cost has been reduced 50 to 70 per cent on some items.

For further information about epoxy resins, contact the Special Projects Editor, METAL PRODUCTS MANUFACTURING.

One of the first steps in making sample heater part is pouring of liquid epoxy compound around the wood model (top left). Glass cloth is used as a reinforcing material to give extra backing and strength (top right). The stamped face of the heater containing opening for controls is removed from the form (bottom left). Complete prototype heater with metal grille is ready for sales force to use in the field (bottom right).





Production die used for forming aluminum tubing for outdoor furniture is a laminate of epoxy tooling compound and glass fibers. With this die, there is less chance of marring the tubing. In use, the die has virtually no abrasive action, eliminating the need for additional finishing for these metal parts.

Better Porcelain Enameling Starts HERE!

Final scale-model for production at

DAY & NIGHT DIV., CARRIER CORP.

Newest facility for the porcelain enameling of water heater tanks is that of the Carrier Corporation, Day & Night Division, at La Puente, California. Designed and built by Ferro, it incorporates the best features of earlier plants plus several improvements in automatic spraying of both shells and flues. In production costs, based on units per man-hour, it sets new standards for the industry.

From portable scale-models such as shown above, Day & Night and Ferro engineers were able to check every detail of production, make changes where needed, then save time and money in construction.

Better porcelain enameling starts in the planning stage . . . and Ferro brings you a world of "know how" in helping you get the *best*, and the *most* for your money.

FERRO

FERRO CORPORATION

Engineering Division – Designers and builders of complete plants for the porcelain enameling and chemical industries

4150 EAST 56th STREET · CLEVELAND 5, OHIO

Emphasize quality and promotion at PEI midyear conference

AN MPM PRESSTIME REPORT

AT THE ANNUAL mid-year divisional conference of the Porcelain Enamel Institute one recurring theme was heard and echoed throughout the two day session held at the Edgewater Beach Hotel in Chicago, May 13th and 14th. That theme was *quality*. The consensus of opinion was that if honest-to-goodness high quality was not adhered to by the industry serious inroads would definitely be made by competitive materials.

It was mentioned both in and out of the meetings that unless the industry saw to it that the quality of its porcelain enameled products was maintained at a high level the industry would suffer. If necessary, the PEI should even begin a policing campaign to inspect the work being turned out by the member companies and insure that high quality is maintained.

According to the comments heard there have been reasons why high quality has not been foremost in the everyday task of turning out products but these fade quickly as soon as the industry realizes that to build a solid *growth potential* for the future, high quality will have to be maintained.

In connection with the first day's session on architectural porcelain enamel it was brought out that the original specification for panels was drawn up as far back as 1952 and that recent more stringent specifications have not reached final approval to permit their being published. The reason is that sufficient attention has not as yet been given to the exact quality standards that should be incorporated into the specification. As a result, any standard or specification that any of the divisions wish to make must now pass the scrutiny of a recently formed subcommittee of the quality control technical committee. The members of the technical committee were carefully selected on the basis of their experience and know-how. As a group they will define the limits of all PEI specifications in as scientific a manner as possible. They will examine each specification proposed with the purpose of setting down the properties of each and every product in question to eliminate all possibility of misunderstanding on the part of the consumer as to what to expect from the porcelain enameled product.

Similar activities within the PEI have defined the property standards of many other products in the past and, now, the task of fully defining the property limits of curtain wall panels remains to be done. The executive committee of the PEI has insisted that standards of quality be defined and passed through the hands of the technical committee before being adopted as the standard of the industry.

Predict growth in business in next five years

The predicted growth in the manufacture of appliances for the next five years will be about 44 per cent. The use of porcelain enamel in appliances, which is, and will remain, the largest user, volume-wise, should increase as appliance volume increases. This, of course, points to a very important growth of porcelain enamel metal in this field.

One of the points suggested at one of the early sessions is that there will be constantly increasing danger of the loss of business to competitive materials because of the steadily increasing momentum of the development and promotion programs of these competitors.

Percentage-wise, the greatest growth potential for porcelain enameled products will be in architectural use the enamelers feel. Aggressive sales and promotion efforts by competitive panel producers such as the aluminum industry will offer considerable competition to the architectural end of the industry. At the present time there still exists many misconceptions and wrong ideas of porcelain enamel by architects and the general public which must be overcome. Another comment heard on current walls was that there is a definite trend among the manufacturers to undertake the entire operation of manufacturing, erecting and supervising the installation of curtain walls. Some even feel that this is the only way of doing it, rather than depending on independent contractors to do the erection jobs which often results in inferior jobs.

Propose sales engineer to join PEI staff

A proposal was heard both in and out of formal meetings that a new position be created in the PEI for a sales engineer who would function as a design engineer and promotion man for the industry in general. He would be constantly investigating the possibility of bringing out new products in porcelain enamel, trying to improve existing designs of the products using porcelain enamel, coordinating the efforts of the PEI with that of the American Institute of Architects, trying to increase public acceptance of porcelain enamel by convincing the major appliance firms of the advantage of mentioning porcelain enamel in advertising their products and guiding production of new products throughout the industry to insure best use and acceptance.

Propose industry color chart

At the afternoon session of the first day, presided over by J. F. Ingram, Ingram-Richardson Mfg. Co., a color chart was proposed that would include 50 or more standard colors for the architectural division to use as a mailing item to customers and potential customers. The idea behind it is to decrease the expense and effort necessary now in producing special colors. A vote was taken to approve the color chart idea and proceed with its development. This work is handled by a committee headed by Herbert Spencer, Jr., of Erie Enameling.

Signs highly competitive

A comment from an executive of one of the companies making signs was that the competition of the plastic sign business was due to their promotion efforts. One of the suggestions heard was that if more promotion effort is done by showing the potential customer how a sign could look, through the use of artists sketches, then perhaps business will increase. Of course, this is an idea that many sign companies have used for years, especially the manufacturers of spectaculars.

plan now to

D-Enamel your Burning Tools

during summer vacation periods

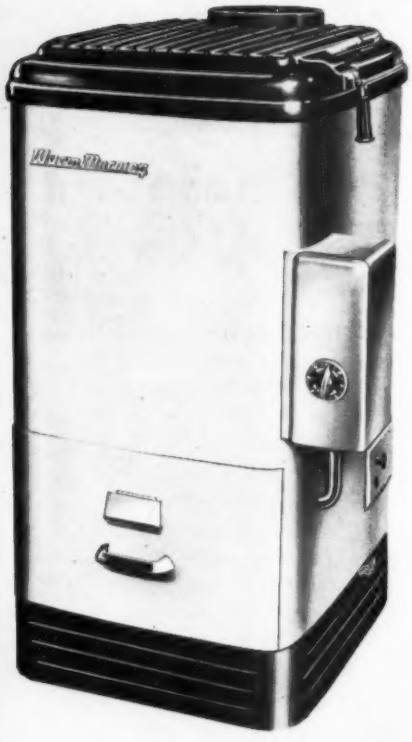
Like all other enamel plant equipment, burning tools need a periodic cleaning to remove the build-up of enamel that occurs during normal production. Most plants find their summer vacation period to be the most convenient time to have this work done. And we're geared to do it promptly, so you don't lose any production time. Because volume of burning tool D-Enameling is greater during the summer months, prices are most advantageous to you. Did you know, for example, that you can have a minimum box-type tool set-up D-Enameled for as little as $100. Get in touch with us today for a firm quotation!

Burning Tool photos courtesy of
The Fahralloy Co., Harvey, Illinois

New Process *D-Enameling* Corp.

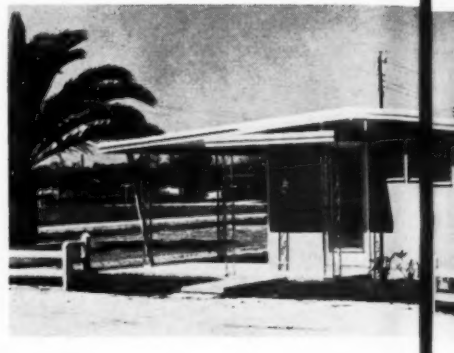
Highland and New Haven Avenues • Aurora, Illinois

the MPM . . . . . foto-news



WARM MORNING Model L-16 gas-fired incinerator, a product of Locke Stove Co., is said to consume all kinds of refuse and combustible trash without detectible smoke or odor. The unit is AGA approved for use with natural, manufactured, mixed, and LP gas, including LP gas-air mixtures. The incinerator achieves virtually smokeless, odorless incineration by use of a specially-designed dual gas burner and a system of interior baffles, it is claimed.

PORTABLE TYPEWRITER, by Cole Steel Equipment Co., Inc., is an addition to the firm's line of office furniture. Weighing only eight pounds, the unit is said to offer "whisper-touch" keyboard, finger molded keys, and is available in pica, imperial, or elite type.



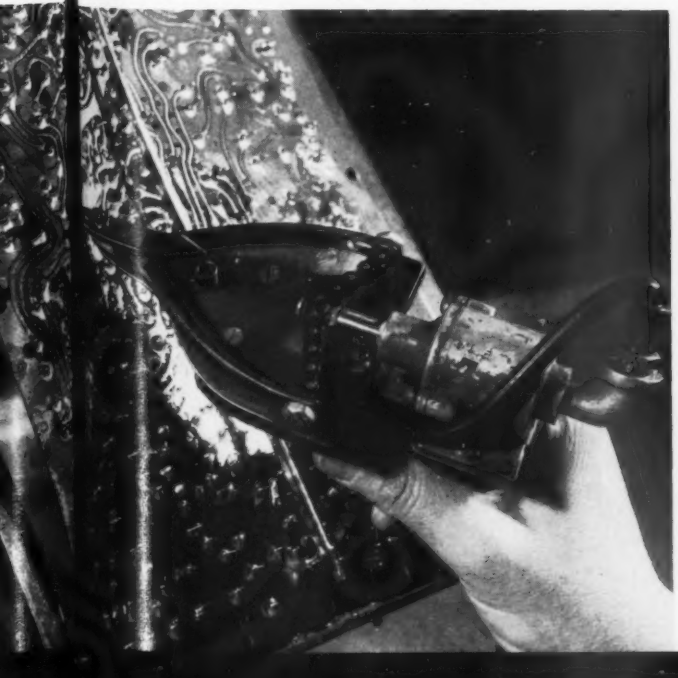
ALL-ALUMINUM structure of the type which will be erected by the hundreds near Tampa, Fla., to house pensioners over 65. They are quickly assembled from aluminum sandwich panels and extrusions on a concrete slab. Panels used in walls and roof are to be fabricated by Anderson Mfg. Co., and assembled by Bellaire Products Co., Inc.

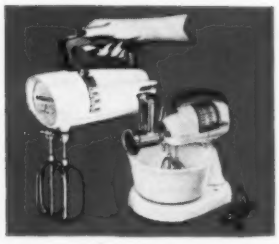
CARGO CONTAINERS, manufactured by Jeta Metal Fabricators, Inc., for military use in the mass movement of supplies around the world, are metal, reusable shipping containers that, although the outgrowth of military needs, may have impact upon commercial shipping operations. The container's dimensions are eight feet-six inches by six feet-three inches by six feet-ten and a half inches. Capacity is 295 cubic feet.

FOREIGN VISITORS to Kelvinator recently were Eleanor Ronnberg, dietician, and Doris Hammarlund, home economist, wearing the uniforms and caps of their professions, as required in their native Sweden. They are in the United States on a two-year study program, including work at Wayne State University in Detroit, and they took time out to visit the Kelvinator Institute for Better Living and its director, Mrs. Arleen Arnold (center).

CURTAIN WALL panels, in green, tan, and brown, grace the new 17-story Fidelity National Bank Building, Oklahoma City, Okla. It required 41,000 sq. ft. of porcelain enameled steel panels, with an overall thickness of approximately two inches, and the panels consist of a 16-gauge porcelain-faced sheet, insulating material, and an 18-gauge backup sheet. Seaporcel Metals, Inc., manufactured the panels.

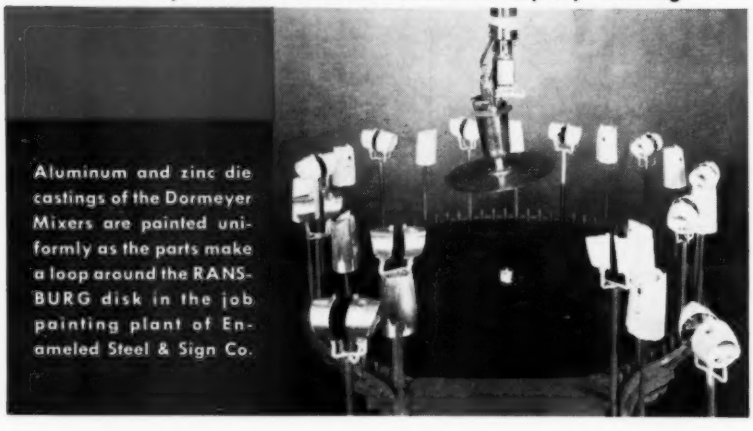
DO-IT-YOURSELF clippers for snipping off printed circuit board leads consist of a small air cylinder, a trigger, a few links of chain, a spring, and a supporting frame. Put them together and you have a snip that can make two cuts per second without operator fatigue. Manufacturing engineers of Westinghouse Electric Corporation's TV-Radio division made this item from an ordinary pair of clippers.





DORMEYER MIXERS
are painted with
RANSBURG
NO. 2 PROCESS

. . . and high quality standards
are easily maintained with Electrostatic Spray Painting



Aluminum and zinc die castings of the Dormeyer Mixers are painted uniformly as the parts make a loop around the RANSBURG disk in the job painting plant of Enameled Steel & Sign Co.

● Enameled Steel & Sign Co. is able to serve many customers like Dormeyer, for their Chicago job painting plant is equipped with modern and efficient finishing facilities for producing high quality, high volume painting.

Electrostatic spray painting has practically replaced all other methods here, for the flexibility and near 100% efficiency of the Ransburg No. 2 Process enables Enameled Steel to serve many manufacturers of a wide variety of products. And, this with a comparatively small labor crew!

Today—with Ransburg No. 2 Process—Enameled Steel is realizing more than 60% paint savings over former hand spray. Rejects have been cut to less than 1%, for the Ransburg No. 2 Process applies a uniform, high quality finish never before obtainable with old-fashioned painting methods.

THINK OF WHAT 60% PAINT SAVINGS WOULD MEAN IN YOUR OWN FINISHING DEPARTMENT

Whatever you manufacture, if your production justifies conveyorized painting, you should look into the savings and improved quality which can be yours with Ransburg Electro-Spray. Let us tell you about the complete Ransburg services, including the test painting of your products in our laboratories.

Ransburg ELECTRO-COATING CORP.
Indianapolis 7, Indiana
RANSBURG

Editor's Mail

→ *from Page 31*

Requests for container brochure

Gentlemen: We wish you would send us a copy of your 28-page brochure covering the use of heavy duty corrugated containers referred to in the lower right hand corner, page 87 of METAL PRODUCTS MANUFACTURING, May, 1958 publication.

The writer is Chairman of this company's Packaging Committee.

A. E. Bocher, Traffic Manager
Hamilton Manufacturing Co.
Two Rivers, Wis.

Gentlemen: Having recently joined Franklin, there is a great deal that I can learn about the many phases of appliance manufacturing. Therefore, please send me copies of the following literature:

1. "Heavy Duty Corrugated Containers for Major Appliances."
2. "Specifications for White Appliance Finishes," by Edward G. Bobalek.

The $.15 is enclosed to cover the cost of the paper listed above.

Henry M. Walt
Assistant to the Director of Engineering
Franklin Manufacturing Co.
Minneapolis, Minn.

Interest in NST

Gentlemen: We are very interested in the pre-shipment testing program for packaged finished products, and the activities of the National Safe Transit Committee. May we have full details?

E. McHargue
Traffic Manager
Nutone, Inc.
Cincinnati 27, Ohio

Gentlemen: One of our divisions, the Day and Night Manufacturing Company, is a member of the National Safe Transit program.

I wonder if you could let me know whether or not this membership would apply to other operations of the corporation, the general requirements and the information pertaining to membership.

Ralph C. Wilgus
Director of Traffic
Carrier Corporation
Syracuse 1, N. Y.

Another reader

Gentlemen: Will you please add to your mailing list Mr. R. E. Digges, our Assistant Enameling Superintendent.

We have been receiving your publication since 1944 and think that it is a great help to the industry.

Thanking you for your service, we remain

Homer L. Gray
Tennessee Stove Works
Chattanooga, Tenn.

to Page 56 →

USS Vitrenamel draws deep, fires smooth, and resists warpage at high temperatures!

At Federal Enameling and Stamping Company, McKees Rocks, Pa., they make a 14-inch draw on some sink models. For this, Federal *has* to use a ductile steel. That's one reason why they use USS* Vitrenamel.

But, ductility is only half the story at Federal. The steel has to take a flawless, porcelain-enamel coat—no blisters, no fish scales, no lines. They use USS Vitrenamel* because it's heat-treated to develop optimum ductility and enameling characteristics.

Resistance to warpage at high temperatures is a must in the enameling industry. The low-carbon and low-manganese of USS Vitrenamel provide the non-sagging characteristics required to maintain form without warping, even during high-temperature firing of the enamel.

With USS Vitrenamel, Federal makes a line of sinks that meets the highest standards of a quality-conscious, leading producer of enamelware.

You can have the same results. Specify USS Vitrenamel.

USS *TRADEMARK

United States Steel Corporation – Pittsburgh
Columbia-Geneva Steel – San Francisco
Tennessee Coal & Iron – Fairfield, Alabama
United States Steel Supply – Steel Service Centers
United States Steel Export Company

United States Steel

Huge design engineering show in Chicago

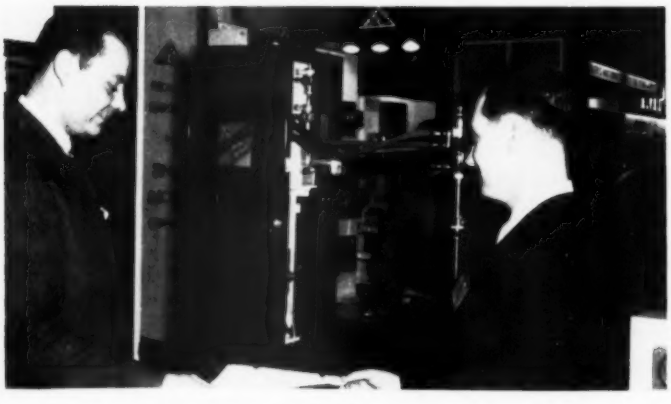
EXCLUSIVE MPM PHOTOS

Gene Rowland (L.) and Jack Fishel, Republic Steel, are shown in the photo at the left, above. The Republic exhibit featured all of the steels available with complete descriptions. F. C. Kluhsman, sales promotion and merchandising manager, W. H. Brady Co., is shown in the photo at the right. This company's specialty is self-bonding nameplates of aluminum and metalized plastic.

THE DESIGN ENGINEERING show has grown to be one of the three largest annual industrial expositions in the country in the span of just three years. First held in Philadelphia in 1956, and then in New York in 1957, the 1958 show just held at the International Amphitheatre in Chicago attracted about 20,000 visitors to rank it among the very biggest.

Purpose of the show was to provide a display medium for basic component products to engineers and designers who are constantly searching for improved devices and materials to incorporate into their company's products. Most of the exhibitors are made up of companies that manufacture small electric motors, electrical controls, production equipment, fasteners, metals for fabrication, and decorative metals and plastics.

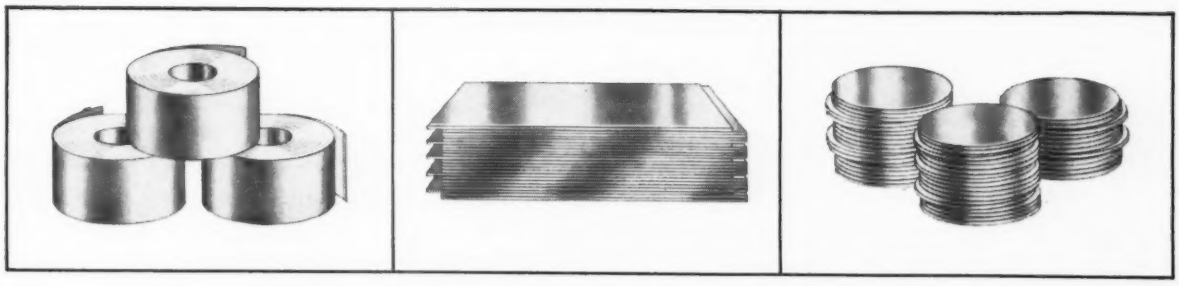
Enthusiasm ran high, both among those who attended, and the exhibitors themselves.



Others at the show were Bill Brooks (L.) and D. Coan, both of Binks Mfg. Co., in the photo above. Their wide range of spray equipment was featured. George O'Brien (L.) of Hotpoint is quite pleased with the explanation being given on solenoids by I. Gebel, chief engineer of the Soreng Div., Controls Co. of America.

Sterling Bushnell (L.) and Carl Lenz, American Nickeloid, talk up the many qualities of their company's product, prefinished metals, in the above photo. In the photo below, T. C. McKee (L.) and J. F. Page, Detroit Controls Div., American-Standard, are admiring the features of Detroit's line of switches — TyniSwitch.

If you use aluminum sheet in any form, specify **Fairmont** to get the maximum



Deep-Drawing Superiority • Versatility • Utility!

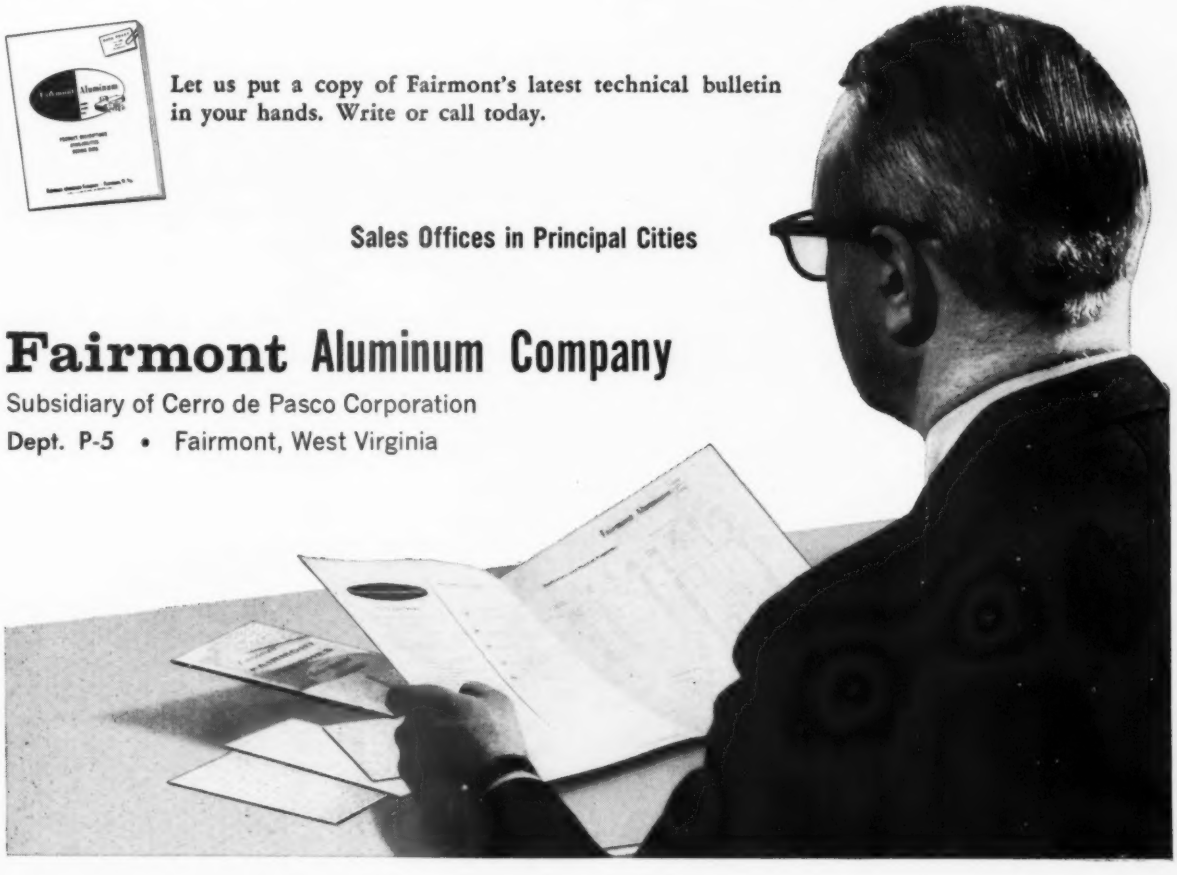
Fairmont wrought aluminum sheet not only meets the standards but exceeds them in mechanical qualifications. Excellent drawing quality, superior finishing and non-earing properties (vitally important to the manufacturer but not definitively qualified in the specification standards) are outstanding examples of Fairmont's superiority. Close adherence to required gauge tolerances is vitally important, since aluminum is bought on a poundage basis.

It is important to you, the purchaser, that every alloy Fairmont makes is rolled every working day.

This affords customers less lead time between ordering and shipment—helps keep inventories low, reducing investment in floor space and work in process. It permits fabricators' change orders to be executed rapidly and economically, if necessary.

And Fairmont's personal attention to orders, both large and small, guarantees maximum satisfaction.

Let us put a copy of Fairmont's latest technical bulletin in your hands. Write or call today.



Sales Offices in Principal Cities

Fairmont Aluminum Company

Subsidiary of Cerro de Pasco Corporation

Dept. P-5 • Fairmont, West Virginia

Design for the Emerson Suburba-nite

joint planning group of sales, engineering, design and production produced a completely-new fan

AN MPM DESIGN FEATURE

MPM EXCLUSIVE FEATURE

Realizing the need for an effective means of development for the new and redesigned products for all its varied product lines, Emerson-Electric took a direct approach. Led by the marketing vice president, E. L. O'Neill, a product policy group held informal meetings made up of a group of management personnel representing sales, advertising, engineering, design, and production. New and redesigned products were completely evaluated.

Proof of the success of the group planning system was the three-faceted development program on Emerson's newest window fan.

Design

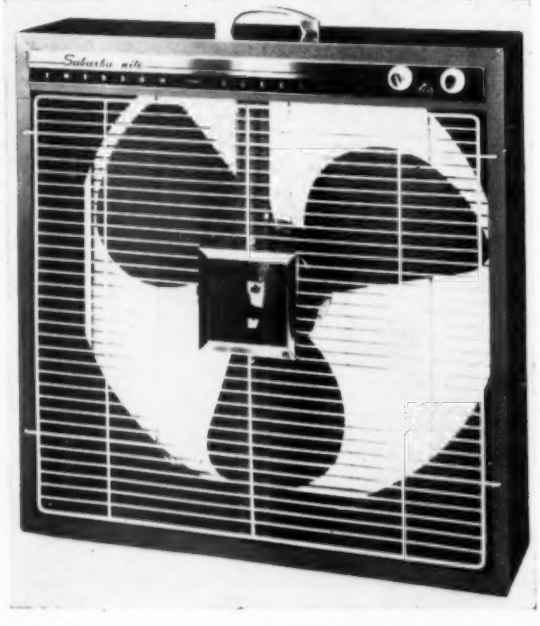
Industrial designers were working on new ideas for future fan lines. Sketches had been prepared by both staff design and Emerson's consultant, Joseph R. Mango of Banka Mango Design. Final sketches indicated that the product should have a built-in look when mounted in the window. A smart new control panel with an aluminum escutcheon was integrated into the fan to achieve an attractive built-in look.

Market demand

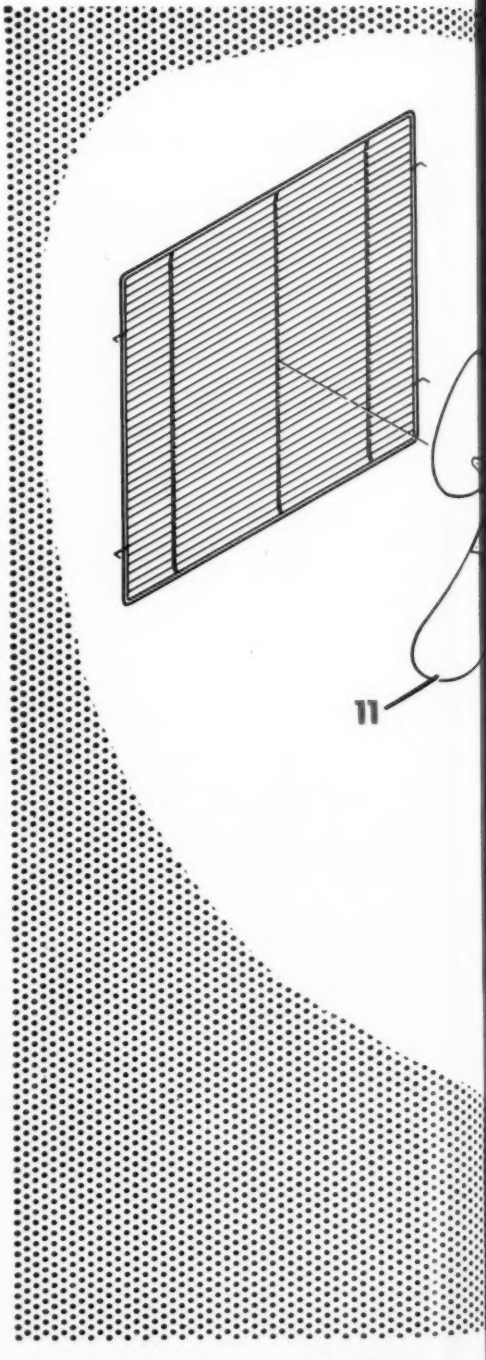
An evaluation of market demand indicated the need for a portable and electrically-reversible fan. Furthermore, it had to be all new and priced lower than the previous year's models without decreasing quality.

Production engineering

Engineering and design worked together closely on the possibility of producing fan housings by the relatively-cheap brake and shear forming method. As a result of the development work of these three groups, prototype models were then made. Experimental housings were made from designer's sketches, and in record time models and cost data were ready for the policy group's approval. There were, of course, problems that arose a number of times during the development stage, but the joint action of the planning group solved these quickly.



The Suburba-nite, a 20-inch portable electrically-reversible floor and window fan, with thermostat and pilot light. The unit has a built-in look when mounted in a window, and is enhanced by a smart new control panel with an aluminum escutcheon.



1 Welded steel wire guard with baked enamel finish.

2 Embossed, multi-color, lithographed aluminum plate.

3 Pilot light which glows when power is on. Thermostat operates fan motor.

4 Molded plastic knobs.

5 Embossed and lithographed aluminum control plate.

6 Shear-brake formed and welded steel housing with baked enamel finish.

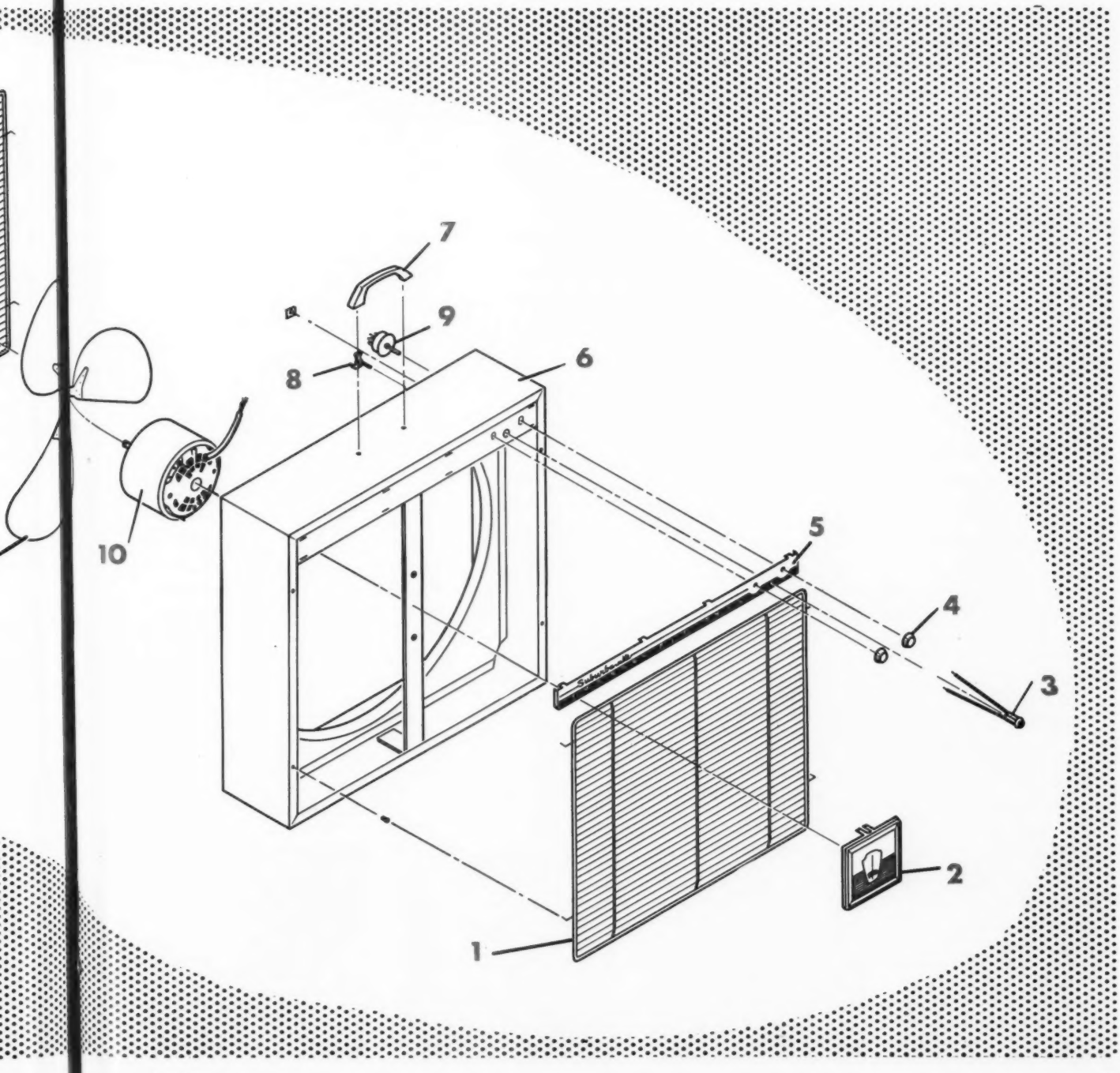
7 Aluminum handle.

8 Thermostat.

9 Two-speed reversing power switch.

10 Six-pole capacitor motor of die cast and rolled steel construction.

11 Three-bladed, 20-inch fan blade, aluminum with steel hub.



WACIA holds second annual show and conference

by Gilbert C. Close • WESTERN EDITOR

AN MPM STAFF REPORT

THE SECOND ANNUAL Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit, in conjunction with a Technical Conference featuring top-flight speakers, was held May 7-11 in the Shrine Auditorium, Los Angeles, Calif. Both exhibit and conference were sponsored by the now two-year-old Western Air Conditioning Industries Association. More than 200 lines of affiliated products were on display. Though the exhibit was not open to the general public, an estimated 12,000 technical and industrial representatives attended the show during its five-day run.

Outstanding features of the exhibit were the many "operating" models on display, and the many "cut-away" models which revealed in exacting detail their various engineering features. Operating displays included complete air conditioning and refrigeration systems down to the last engineering detail of the installation. Cut-aways included products ranging from large industrial boilers down to delicate instrumentation.

The technical conference, held in conjunction with the exhibit, and in charge of Arthur J. Hess, conference chairman, included sessions covering such topics as high temperature hot water systems, water conservation, residental air conditioning, problems affecting mechanical engineers, structural engineers and architects, and talks on air pollution.

The conference included two general technical sessions, three symposiums on "Schoolhouse Environmental Control," "Air Conditioning with Reference to Particle Size, Filter Testing, and Smog Control," and "Air Conditioning Existing Buildings," and a panel discussion devoted to "Automatic Hot Gas Defrost for Commercial and Industrial Evaporators." The subject "codes" also came in for a panel discussion.

Representative talks or papers included "Results of Some Studies on Air Pollution," "The School Board's Viewpoint," "Steam and Hot Water Systems," "Radiant Heating Systems," "High Temperature Hot Water Systems," "Water Conservation," "Central Air Systems," and "Air Conditioning Existing Residences."

A spot-check of visitors on the floor indicated that just as many had come to enjoy the benefits of the technical conferences as had come to view the exhibits. When pressed, most admitted that either the conference or the exhibit was well worth the time spent.

One visitor, a manufacturer of an insulating material, put it this way . . . "Last year, I concentrated my attention on the exhibit only and obtained a half-dozen totally-new market possibilities for my product. This year I expect to double that number by attending the conference sessions as well."

William P. Tennity, president of WACIA, was well pleased with the attendance at the show and the enthusiasm shown both by exhibitors and visitors. He is looking forward to another booming year in the related air conditioning, heating, ventilating, and refrigeration businesses.

Many "operating" displays like this one provided exacting data for visiting engineers and architects.

MPM photos

Many "cut-away" product displays, such as this boiler for heating a swimming pool, revealed product construction.

Noticeable at the recent WACIA *Exhibit in Los Angeles were the large number of spun aluminum components for air conditioning systems.*

Medical and public health official emphasis on the value of dust-free air has resulted in many refined air filtering systems.

MPM photos

A Review of the Phosphate Coatings

Specified for the Protection of Metal Surfaces

By HUGH GEHMAN, Assistant Manager, Product Development Dept., AMERICAN CHEMICAL PAINT COMPANY

Phosphate coatings are protective inorganic finishes that actually change the chemical nature of metal surfaces. The metal reacts with the applied phosphate solution to form a nonmetallic, crystalline coating which serves to:

- **Improve paint adhesion**
- **Provide protection against corrosion**
- **Increase lubricity of friction surfaces**
- **Facilitate mechanical deformation of metals**
- **Decorate—in many instances**

Satisfactory protection of steel, zinc and aluminum surfaces against corrosion, paint peeling and blistering, and hard wear requires precision methods of chemical conversion coating.

Types of Conversion Coatings

There are seven classes of chemical conversion coatings commonly specified and used throughout industry today. They are as follows:

Zinc-iron phosphate (ACP Granodine®). This is the heaviest type of coating (gray in color) used for prepaint treatments on steel, iron and zinc surfaces. The process requires five or six operations: cleaning; rinsing; rust removal, if necessary; coating; rinsing; and a second rinse. Coating weight ranges from 100 to 600 mg per sq. ft.

Medium or large volume production of automobile bodies, appliances, projectiles and cabinets can be handled effectively.

The coating solution improves paint adhesion by forming a crystalline deposit over the metal surface. This deposit is rough, as revealed microscopically, and so offers an ideal gripping surface for paint particles.

Manganese-iron phosphate (ACP Thermoil-Granodine®). This is a heavy black coating used on friction surfaces to prevent galling, scoring and seizing of parts. Typical metal parts treated are pistons, piston rings, gears, cylinder liners, camshafts, tappets and various small arms components.

Iron phosphate (ACP Duridine®). This is a comparatively new process that places a light coating on surfaces for improved paint adhesion. Since cleaning and coating occur in the same bath, it has only three to five stages.

The iron phosphate treatment is a spray process suited for medium to large volume, large or small work. Precleaning is normally unnecessary, an economy factor in its favor.

Products protected by this process are steel or iron fabricated units, such as cabinets, washing machines and refrigerators. Weight of coating is 50 to 100 mg per sq. ft.

Zinc phosphate (ACP Lithoform®). This is a crystalline coating produced on galvanized iron and other zinc surfaces—also cadmium—for improving paint adhesion. The purpose of the coating is to provide a paint-gripping surface and to prevent the reaction between acidic components of the paint and the zinc metal, with the formation of soaps and loss of paint adhesion.

This coating is applied in weights of 75 to 500 mg per sq. ft. There are no limitations on volume or production or on size of products treated. Zinc phosphate coating is used on zinc alloy die castings, zinc or cadmium plated sheet or components, hot dip galvanized stock, and Galvanneal.

Amorphous phosphate (ACP Alodine®). This is a relatively new protective coating for aluminum and aluminum alloys. It may be used in place of anodic deposition for improved paint adhesion and corrosion resistance.

This coating is practical for production in any volume. Coating weight is 100 to 600 mg per sq. ft. Products treated include helmets, belt buckles, aircraft and aircraft parts, bazookas and rocket motors, roofing and siding. Particularly good when aluminum is painted prior to forming.

Zinc-iron phosphate for oil absorption (ACP Permadine®). This is a relatively heavy coating adapted to the retention of rust-inhibiting drying or nondrying oils and waxes on ferrous metal surfaces. The coating is applied to a weight of 1000 to 4000 mg per sq. ft.

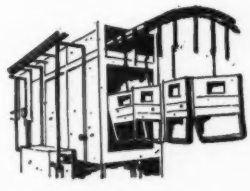
The process is satisfactory for large or small work in any volume—nuts, bolts, hardware, guns, tools, etc.

Zinc-iron phosphate for metal forming (ACP Granodraw®). This is a specialized coating used in conjunction with a suitable lubricant to facilitate the cold mechanical deformation of steel. The coating acts as an anchor for the lubricant throughout drawing, extrusion, and cold forming operations.

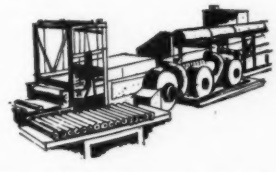
It is a successful treatment for products such as blanks and shells for cold forming, heavy stampings, impact extruded shapes, drawn wire and tube.

For more complete information about any one or all of these chemical conversion coatings, contact an ACP sales representative or write us at Ambler, Pa.

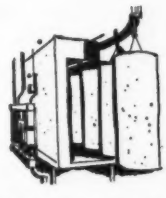
Typical Installations of Phosphate Coating Systems



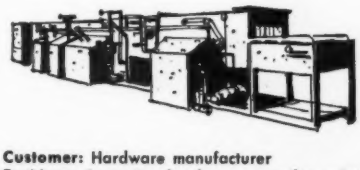
Customer: Truck manufacturer
Problem: Preparing cab parts for painting
Cycle: Phosphate wash; phosphate wash; rinse; chromic acid rinse; dry



Customer: Aluminum screen manufacturer
Problem: Final finish of aluminum shade screen
Cycle: Wash; rinse; phosphate coat; rinse; chromic acid rinse; dry



Customer: Water heater manufacturer
Problem: Preparation of water heater shells for synthetic enameling
Cycle: Phosphate wash; rinse; chromic acid rinse; dry



Customer: Hardware manufacturer
Problem: Preparing hardware parts for painting
Cycle: Wash; rinse; phosphate coat; rinse; chromic acid rinse; dry

CHEMICALS ACP PROCESSES

AMERICAN CHEMICAL PAINT COMPANY
Ambler 33, Pa.

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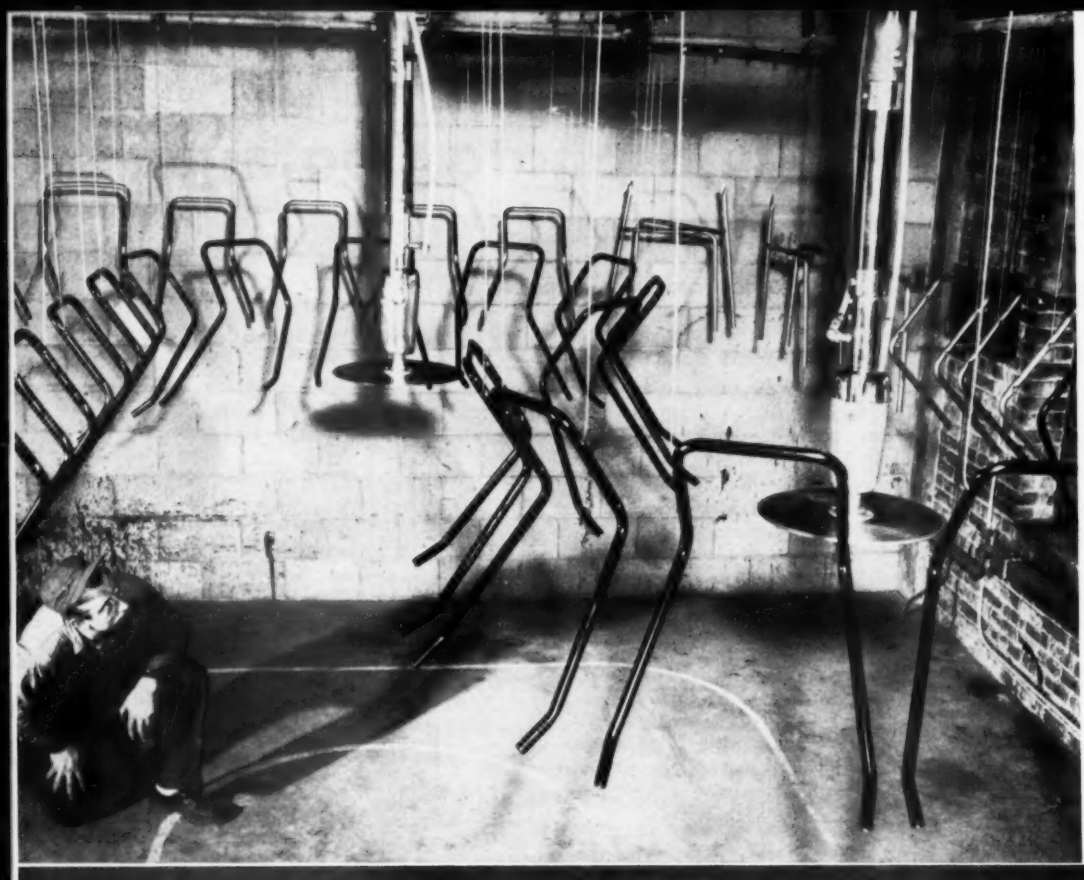
New Chemical Horizons for Industry and Agriculture



In this view, chair legs are being finished on the newest paint line installed at Enameled Steel & Sign Co. These electrostatic heads can be regulated to travel a 7½-ft. vertical stroke, enabling painting of objects measuring as large as 72" x 28" x 30". The overhead conveyor forms a double loop between the discs so that both sides of the objects to be finished can be painted adequately. The rate of production is about 180 complete chairs per hour.

EXCLUSIVE MPM PHOTOS

Efficiency and versatility in a job finishing plant

An organic finishing plant that employs the electrostatic spray process for application. One of the largest job finishing plants using electrostatic spraying is a Chicago firm that has long been an innovator in finishing.

AN MPM STAFF FEATURE

MPM EXCLUSIVE FEATURE

TO SAY that Enameled Steel & Sign Company has kept their job shop operation up-to-date would actually be an understatement. This Chicago firm, which specializes in electrostatic organic finishing, has not only maintained an up-to-date finishing operation, but has gained a reputation of being innovators in the field of electrostatic spray painting.

This firm, established in 1901, has a varied background of manufacturing experience. The company started as a producer of gum process painted signs. Later, it was one of the first processors using silk screen stencils for design painting. In the late 30's, new mechanical spray methods were developed, and this was the beginning of high production painting of small parts with high efficiency. When the management of the company realized the advantages that could be gained while using highly-efficient, automatic equipment, they were constantly in search of more efficient methods for organic finishing. Shortly after the second World War, Enameled Steel became quite interested in the number one process of electrostatic painting. They became early licensees of the electrostatic process, and from that time on have incorporated fresh ideas into organic finishing.

Can handle variety of sizes

At the present time, Enameled Steel & Sign Company has fourteen complete electrostatic spray painting systems that use the disc method of atomization. Out of the fourteen complete painting systems, there are nine spindle-type finishing machines, each of which has at least two loop and disc stations and a baking oven. On these machines the painted part rotates around the paint-dispensing disc on a conveyor loop as the paint is being delivered from the disc. These units are ideal for large volume capacity for painting die cast-

ings and small stampings.

Two overhead conveyor-type machines, each of which has three-stage phosphate cleaning and etching cycles, can run parts up to eight feet in length. The company also has three flat bed conveyor-type machines which enable panels up to 20 feet in length to be electrostatically painted. Specially developed discs are installed below the conveyor to paint the under side of parts moving along the conveyor. Three metal cleaning machines complete the main facilities at the plant. Each of these has three stages of operation consisting of acid wash, rinse, acid etch, and burn-off. These machines clean and etch smaller parts for the spindle-type painting machines.

The flexibility and adaptability of these finishing units makes them simple for Enameled Steel to switch from one job to another. In a job shop operation like this, as many as a dozen different customer's jobs are run in one eight-hour shift. Continuous service with high production runs characterize the operation.

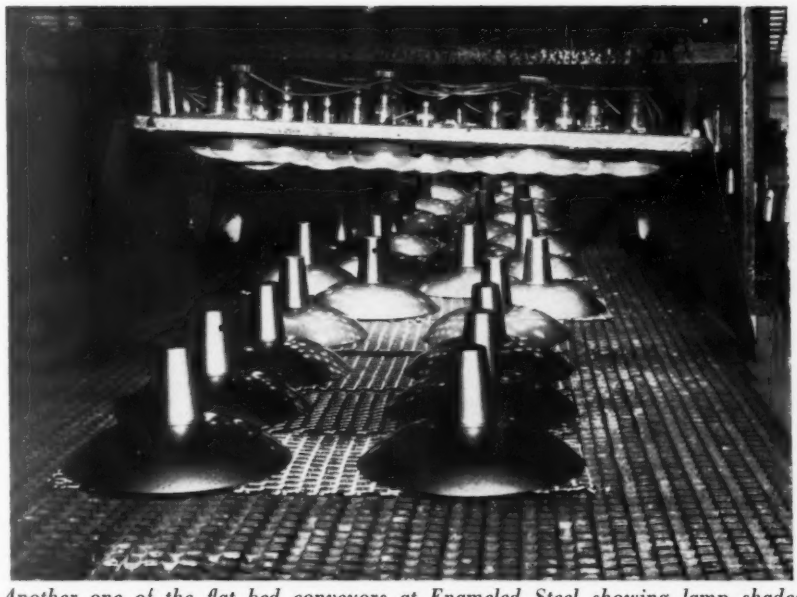
Early development work

The original electrostatic process used at Enameled Steel consisted of the rotating bell-type atomization device. A considerable amount of success was experienced with this system, but the company found it somewhat difficult to paint smaller parts. The bell system was most useful in painting large areas, yet some difficulties were incurred when the items to be painted were small. At this time, Enameled Steel engineers, working with a supplier of electrostatic equipment, developed the loop and disc method of application.

This system makes use of a spinning disc, generally mounted in a horizontal or inclined position, with a conveyor going around the disc in a horizontal line of travel. The parts rotate as they proceed in this loop, and thus are exposed to the paint electrically atomized from the spinning disc in the center of the loop. As a further step, the disc was made to reciprocate vertically with a variably controlled stroke, thereby giving the process flexibility to handle either large or small parts.

Wide variety run

The number and variety of different parts that are finished at Enameled Steel are unusually large. One of the most unusual is a portable drill, consisting of four separate zinc-aluminum die castings. These four parts of the drill are mock-assembled and placed on a specifically-made spindle holder.



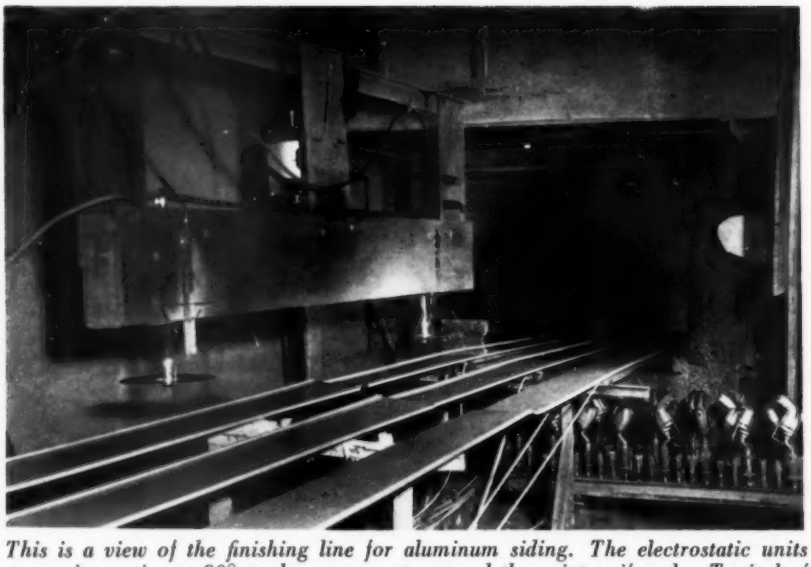
Another one of the flat bed conveyors at Enameled Steel showing lamp shades emerging from an infra-red lamp oven where they are baked. These parts were finished with a metallic brass finish and then coated with a protective coat of clear Epon baking enamel. MPM PHOTO

Perforated materials of all types have been, and are being, run at Enameled Steel & Sign Company. Grilles and screens for such purposes as air-conditioners, tape recorders, and electronic equipment are painted on the flat bed conveyor machines, or on the overhead, depending on size. Perforated materials, to the contrary, can be painted most efficiently with the electrostatic method.

Acoustical ceiling panels, which have small, round holes stamped in them, are painted on the flat bed conveyor with remarkably-good results. Color control and uniformity of thickness of the finish are absolutely essential here. Most of the acoustical ceiling material is run in squares of about two feet in size. However, this ceiling material has been run in lengths up to 24 feet, with normal lengths of six feet.

A new item with the company is a tapered, tubular table leg. An unusual setup for painting this tubular part consists of applying a metallic finish, and then following up on the same conveyor line with a clear epon baking enamel.

Here shows the electrostatic finishing of air-conditioner grilles on one of the flat bed conveyor machines. This type of machine is especially well adapted to the painting of long flat parts up to 20' in length with perfect color control. MPM PHOTO



This is a view of the finishing line for aluminum siding. The electrostatic units are reciprocating at 90° to the conveyor to spread the paint uniformly. Typical of the versatility of the finishing at Enameled Steel, the refractory-burner infra-red oven in the background is also baking paint on the drill motor housings at the bottom right in the photo.

Metal furniture parts of all types are painted at Enameled Steel, and these include trays for hostess carts, tubular steel legs, and metal snack bar swivel stools.

Other items, finished at this plant are the Dormeyer mixer units and the portable unit, "Dormey." These are die-cast zinc-aluminum parts, the motor base, the arm support, and the pressed steel turntable and mixer base.

Two methods of cleaning used

Since two different types of metal parts are painted at Enameled Steel & Sign Company, two slightly-different methods of metal cleaning operations are followed. On die-cast zinc-aluminum alloy parts, cleaning consists of a mixture of a liquid phosphate acid etch solution maintained at 140°F., followed by a powder material in a solution, with clear rinse in between. Another cleaning operation for zinc-aluminum castings consists of a mixture of the acid phosphate compound and the cleansing powder in a relatively-heavy solution for the first stage. The third stage then consists of a lighter mixture of the same two materials, followed by burn-off.

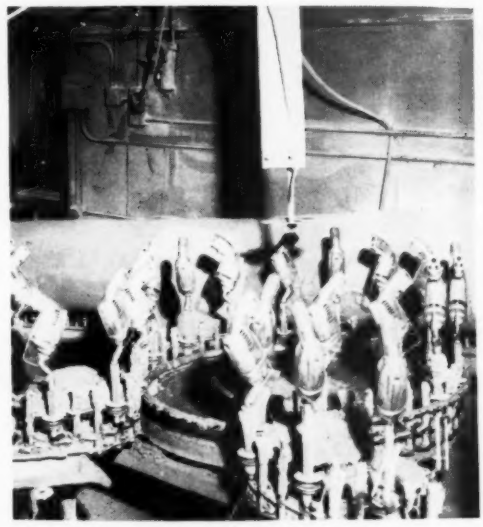
Oxygen tanks are receiving a prime coat of a brown Epon-type paint in this view. Note how the spindle conveyor utilized here forms two loops between the electrostatic units. The conveyor is arranged to rub against a counter-rotating wheel that causes the spindles to rotate, thereby assuring uniform paint coverage.

The cleaning process for steel parts consists of a somewhat lighter etching solution of acidic phosphate compound and somewhat more cleaning compound to clean the greasier surfaces of steel parts. Three metal cleaning machines are used for treating smaller parts that are to be run on the spindle-type finishing machines.

New finishing line

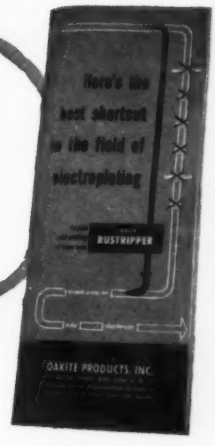
Just recently, the company added a high-capacity, completely-integrated finishing line to the present equipment in the plant. This new finishing machine consists of four of the latest-type loop and disc electrostatic spray units, a gas-fired refractory-burner-type baking oven, and a three-stage spray cleaning machine. The design of the entire machine was based on the extensive finishing experience that Enameled Steel engineers have acquired. Every phase of the operation of this machine is completely automatic. Thermostatically-controlled solutions for a washing cycle, and temperature-controlled ovens that can be re-set to any desired operating conditions, have been incorporated into the unit. The size of the tunnels in the washing and baking oven are approximately nine feet in height by four feet in width. The overhead conveyor is designed so that maximum versatility can be had in loading parts of various sizes and shapes. The conveyor dips down near the loading line so that either small

to Page 69 →



An ingenious method of finishing a number of parts at one time. Four parts of a ¼" hand drill made by the Skil Corp. are mock-assembled without fasteners and mounted on specially designed holders on this spindle conveyor. Then all four parts are electrostatically painted at the same time.

Platers find many uses for chelating *cleaner



*Chelating (pronounced key-lating) cleaners convert metallic salts and oxides into compounds soluble in water.

By chelating and removing rust or heat scale at the same time that it removes oil, Oakite Rustripper combines pickling and alkaline cleaning into one operation. It also avoids disadvantages of acid pickling, such as hydrogen embrittlement and etching of machined surfaces.

Platers now use Rustripper for dozens of difficult steel-cleaning jobs. Here are some examples reported in recent weeks:

CALIFORNIA: "Rustripper has ended pickling damage such as embrittlement." (Removing oil and light rust from machined landing gears before cadmium plating.)

NEW YORK: "Now saving about $10.40 per day on removing rust and scale and producing brighter plate." (Rustripper, added to reverse current cleaner in automatic plating machine, has eliminated separate pickling of wire towel racks before nickel and chrome plating.)

CONNECTICUT: "Rustripper added to reverse current cleaner has eliminated troublesome smut from metal furniture prior to copper-nickel-chrome plating."

NEW YORK: "Rustripper very good in barrels for derusting and brightening business machine parts . . . also for removing brown stains from parts put through black oxide treatment."

NEW YORK: "Small steel aircraft parts were embrittled by acid pickling. Rust, heat scale and stains are now safely removed by Rustripper and cyanide."

NEW JERSEY: "Only two cleaning rejects in first 15,000 parts plated." (After Rustripper was added to reverse current cleaner in automatic plater to eliminate smut from tubular steel furniture.)

INDIANA: "Rustripper is the best barrel compound we ever used for this job." (Removing tough heat treat scale from steel screws.) "Total cleaning and zinc plating time has been cut in half."

NEW YORK: "Had trouble with light rust on business machine parts before cadmium plating; also with smut left after electrocleaning. Rustripper cured both troubles."

FREE A 14-page illustrated booklet called *"Here's the best shortcut in the field of electroplating"* tells about many ways in which Oakite Rustripper can be of great value in the plating shop. Write to Oakite Products, Inc., 32H Rector St., New York 6, N. Y.

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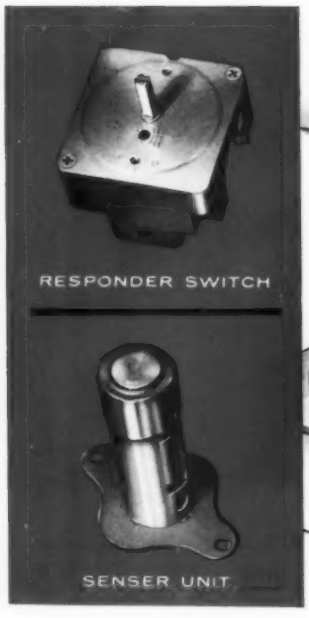

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in the NEW CHEF-O-MATIC SURFACE ELEMENT TEMPERATURE CONTROL, *Just Announced*

New Features

- Smaller, more compact, easy to install
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- Temperature compensated up to 220°F ambient
- New convenient temperature adjustment to compensate for altitude, or differences in ranges, at point of use
- Lower cost

Features of Original Model Retained

- All electric, wire connections only. No tubes or other mechanisms to fuss with
- Quick response and recovery, dependable repeatability
- Accurate control in the Warm, Boil and Fry ranges
- Anticipating feature of proportioning control limits over-shoot
- Infinite number of precision settings, on a linear scale, in either direction of knob rotation
- Temperature control range—100°F to 450°F
- Single unit can control any wattage element up to 3500 watts, including split coil types
- All units completely interchangeable
- Reduces inventory and installation problems
- User safety assured by low voltage system between senser and responder switch.
- Only one transformer for any number of surface units
- Rugged senser—withstands up to 800°F
- Automatically reduces wattage when cooking utensil is taken off surface element

8001

Write for detailed specifications and costs

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Photo story of the ARI convention

THE ANNUAL MEETING of the Air-Conditioning and Refrigeration Institute was held at The Homestead, Hot Springs, Va., May 4-7. At the annual meeting of the board of directors, D. V. Petrone, president of Typhoon Air Conditioning Co., Div. of Hupp Corp., was elected president of ARI.

He succeeds Lud Emde, president of Temprite Prod. Corp. Petrone has been vice-president of ARI for the past year. Elected to succeed him in the vice presidency was Rudy Berg, vice president of the Copeland Refrigeration Corp., who has served as ARI treasurer for the past year.

The new treasurer of the Institute is L. N. Hunter, senior vice president for engineering and research of National–U. S. Radiator Corp. The newly-elected officers, together with Emde as immediate past president, and ARI managing director George S. Jones, Jr., will make up the organization's executive committee for the coming year.

D. V. Petrone, newly elected president of the ARI *and president of Typhoon Air Conditioning Co., Div. of Hupp Corp., left, A. F. Ward chairman, Unitary Air Conditioner Section of the* ARI *delivering his report on the certification program for the section. (Exclusive* MPM *photo by Stephen Blake). Bert Lange, Manager of Marketing Services, Life Magazine.*

Meeting of the board of directors of the ARI *Sunday, May 4.*

12th Exposition in Detroit

The 12th Exposition of the Air-conditioning and Refrigeration Industry will be staged in Detroit February 5-8, 1962, the Board of Directors of the Air-Conditioning and Refrigeration Institute confirmed at the annual meeting. The Detroit dates had been tentatively reserved pending action of the Board.

The Industry Exposition will be housed in Detroit's new Convention-Exhibit Building, a part of the city's new civic center. Halls "B" and "C", with a gross area of 197,000 square feet, will be used. The new buildings, now under construction, are expected to be completed next January.

Meanwhile, preliminary plans are going forward for the 11th Exposition of the industry, scheduled for November 2-5, 1959, at Atlantic City, N.J.

Wet weather was no deterrent to the golfing crew at the annual ARI *meeting. In the photo at the left are Bill Bours, Dupont, Ray Serfass, York Div. of Borg-Warner, Frank White, York-Shipley, Inc. and Jim Tweedell of Carrier. In the second shot are Henry Strong of* ARI, *Larry Macrow of Carrier, and Elbridge Dunphy of Acme Industries. Over in the third photo are B. E. Boyd and E. F. Burow of Owens Corning Fiberglas, Dick Line of Hussmann Refrigerator, and Lud Emde of Temprite Prod. In the last photo from the left are Rudy Berg, Copeland Refrigerator, Coit Lytton of Lennox Industries, Burl Brown of National U. S. Radiator and Ken Cash of Penn Controls.*

Editor's Mail

→ *from Page 42*

More on Chemical Milling

Gentlemen: We are interested in the "Chemical Milling" process, briefly described on page 56 of MPM for March, 1958. We would like to discuss the process with a supplier, preferably a company in our area, and would appreciate receiving some company names from you.

E. J. Roehl
Manager of Technical Development
Thomas Strip Division
Pittsburgh Steel Co.
Warren, Ohio

Sorry

On Page 29 of the May issue of MPM, in the article entitled "GAMA comes out fighting," the names of the speakers at the Tuesday morning breakfast were unwittingly given in reverse order. Suffice to say that the editor, who misinterpreted the order in which these names were to appear, has had his day on the rack.

To set the record straight, the gentlemen appearing in the photo are, from LEFT to RIGHT, Clifford V. Coons, Stanley H. Hobson, George H. Richards, F. E. Hodgdon, S. F. Wikstrom, and H. Leigh Whitelaw. Now that the true identity of these men has been reestablished, a pledge is in order here to *not let it happen again.*

Editor

Sensational NEW COSMO C-57 CONTACT WHEEL

AVAILABLE IN THE NEW WONDER MATERIAL URETHANE RUBBER

Industry Reports up to 15 TIMES LONGER WHEEL LIFE

because of greater resistance to abrasion

FASTER CUTTING . . .
Expertly designed serrations for greater flexibility . . . covers more area with each pass.

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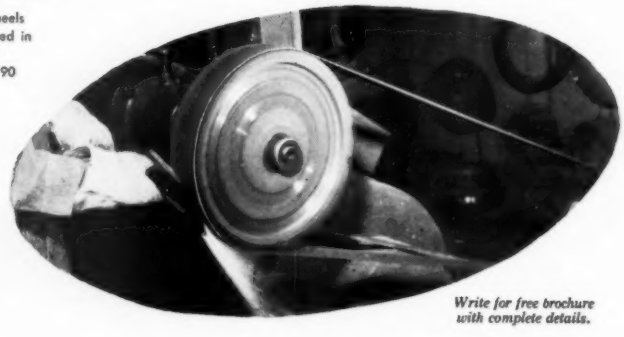
Increase Your Belt Life Grind and Polish Faster at Less Cost with the new sensational COSMO C-57

Urethane Rubber Wheels Manufactured in Durometers from 60 to 90



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Solenoid article of interest

Gentlemen: My attention was recently called to an excellent article in the February, 1958 issue of "Metal Products Manufacturing" entitled "The Testing and Application of Solenoids for Appliances." It is the purpose of this letter to respectfully request a copy of this issue, or a reprint of the article in question.

In addition, since the operation of our company is closely connected with the appliance industry, this trade journal would be quite valuable in keeping abreast of the trends in the industry. Hence, if possible, we would appreciate consideration for addition to the circulation list of this journal.

We sincerely appreciate your cooperation in this matter.

J. C. Atterbury
Mgr. Special Products Development
White-Rodgers Company
St. Louis, Mo.

Butyrate lacquer of interest

Gentlemen: I have just read the article "Lacquer Protects Outdoor Aluminum" in the January, 1958 issue of METAL PRODUCTS MANUFACTURING, and my curiosity is aroused. We have been specifying methacrylate lacquer for aluminum surface protection in our work for some years with confidence, but have not been aware of butyrate lacquer.

I would like very much to find out typical comparative costs between these two materials applied to typical Architectural Aluminum work, as well as comparative efficiency, lasting qualities, limitations, and how to properly specify the butyrate lacquer in our Architectural work for best results.

I would appreciate whatever help you can give me in this matter at your earliest convenience.

Walter F. Butler
Specifications Dept.
Smith, Hinchman & Grylls Associates, Inc.
Detroit 2, Mich.

Editor's Note: Mr. Butler has been referred to Eastman Chemical Products, Inc., Subsidiary of Eastman Kodak Co., 260 Madison Ave., New York 16, N. Y.

Another reader of MPM

Gentlemen: We have been pleased with the improved editing and the extended coverage of MPM. It now fills many more jobs than it did in years past.

We are interested in adding the name of one of our friends to your distribution list. We think your publication can be of real help to them in their planning and development work. Would you be good enough to add the name of Otto R. Scheurer, Chief Engineer, Tokheim Corp., 1602 Wabash Ave., Ft. Wayne 1, Ind.? Thanks so much.

Mel Combs
Superintendent
Vitreous Steel Products Co.
Nappanee, Ind.

Editor's Note: Mr. Scheurer has been added to the mailing list for MPM.

Take a Lesson from Maytag

Promotion-wise Suggs Co. of Dunn, N. C., a Maytag dealer, made the front page of their local paper. L.-R. are J. Suggs, Geta Wood, and Roland Hall. Maytag's more than 15,000 dealers are now staging Spring Fair promotions in a carnival atmosphere to keep sales up. Read on:

Maytag Net Income Up

Net income of the Maytag company increased 6.6 per cent for the first quarter of 1958, compared with the same period a year ago, according to first-quarter results announced by Pres. Fred Maytag II.

Net income for the first three months of 1958 amounted to $1,812,341, he said, against $1,700,375 during the comparable 1957 period. The current figure equals $1.04 per share of common stock after payment of preferred dividends, compared with 97 cents a common share for the same period last year.

Maytag's consolidated net sales for the first quarter totaled $25,081,693, compared with $25,777,517 for the first quarter of 1957. This represents a decrease of less than 3 per cent, compared with a reported decrease for the industry as a whole of approximately 20 per cent, Maytag pointed out.

Maytag Saves $1,000,000 in 1957

Over a million dollars in cost reduction was achieved during 1957 through the work simplification program at the Maytag company, it was announced at a dinner honoring outstanding contributors to the program. The past year was termed "our finest year in cost reduction" by I. A. Rose, Maytag manufacturing vice president, who presided at the dinner.

Fred Maytag II, Maytag president, personally congratulated the supervisors present on surpassing the goal they had set for themselves a year before. He presented certificates to the top 40 supervisors whose ideas submitted during the year resulted in the savings of $5100 or more each.

IAM 26th Annual Convention and Exhibit scheduled

The Institute of Appliance Manufacturers' will hold its 26th Annual Convention and Exhibit at the Netherland-Hilton Hotel, Cincinnati, Ohio, June 1-4. An interesting and varied program has been arranged, and prominent speakers have been retained to highlight the four-day session.

SCHEDULE OF EVENTS

SUNDAY, JUNE 1

4:00 EXHIBIT PREVIEW
A reception for exhibitors by the officers and trustees of the Institute of Appliance Manufacturers. This informal party gives early arrivals a chance to get a preview of the exhibits.

MONDAY, JUNE 2

10:00 KEYNOTE SESSION
ANNUAL REPORT TO THE INSTITUTE
LEONARD RAULSTON,
President
Institute of Appliance Manufacturers
"AMERICAN CONSUMERS — WHAT MOVES THEM TO BUY"
IRVING GILMAN,
Vice President
Institute of Motivational Research
RECOVERY — WHEN AND HOW MUCH?
MARTIN R. GAINSBRUGH,
Chief Economist
National Industrial Conference Board

2:00 MEETING OF BOARD OF TRUSTEES

2:00 ROUND-TABLE DISCUSSION: "LABOR RELATIONS IN THE APPLIANCE INDUSTRY"

9:00-5:00 INSPECTION OF EXHIBITS
The meetings have been planned so that they will not extend for more than two hours, leaving four hours each day exclusively for the inspection of exhibits. Exhibitors are more than suppliers to the major appliance industry—they are an integral part of the industry's progress, just as their exhibits are a vitally important part of the convention program.

TUESDAY, JUNE 3

10:00 AN ALL-DAY CONFERENCE ON PRODUCT DESIGNING, MARKETING AND ADVERTISING
Theme: *"HOW TO GET PEOPLE TO WANT YOUR PRODUCTS"*
Chairman: A. B. RITZENTHALER,
Vice President
The Tappan Company
Panelists: JOSEPH R. MANGO
Banka Mango, Industrial Design
M. ROBERT WILSON,
Executive Vice President
Steltenkamp-Wilson and Associates
Marketing Consultants
JACK S. PETTERSEN
Jack Pettersen and Associates, Advertising Agency
In the morning, these men will speak individually to indicate ways each appliance manufacturer can increase his sales and profits in the present market. In the afternoon, the panelists and the chairman will discuss case histories, sketch appliance designs, and answer questions submitted.

12:30 GENERAL LUNCHEON

12:30 SPECIAL LUNCHEON FOR SOLID FUELS DIVISION
Chairman: T. A. GLASCOCK, JR.,
Vice President
Glascock Stove and Manufacturing Company

2:00 CONFERENCE ON PRODUCT DESIGNING, MARKETING AND ADVERTISING —Continued

7:30 BUFFET SUPPER

WEDNESDAY, JUNE 4

10:00 KITCHEN EQUIPMENT DIVISION
Chairman: A. B. RITZENTHALER,
Vice President
The Tappan Company
"PUT SUPPLIERS ON YOUR SELLING TEAM"
PATRICK McCAUGHEY,
General Sales Manager
The Wilcolator Company
The Role of the Kitchen Equipment Specialist
FHA Eligibility Requirements for Appliances
Effects of the New Housing Legislation
Progress Report on Color Standardization
Service — A Sales Tool
Cooperative Advertising and Excise Taxes

10:00 JOINT MEETING OF GAS AND OIL HEATING DIVISIONS
Co-Chairman: ROBERT H. NORRIS,
President
Dearborn Stove Company
WILLIAM H. HAAG,
President
Perfection Industries
Division of Hupp Corporation
Comparative Sales Statistics:
(a) By fuel types
(b) By product types
Changing Distribution Pattern in Heating Equipment
Changes in Municipal Ordinances
Retail Financing Plans for Heating Equipment

12:30 ROUND-UP LUNCHEON
NOTE: At the conclusion of the discussion of these general subjects, the meeting will be subdivided between those interested in gas and oil.

The exhibit booths will be open from 4:00 to 6:00 on June 1, from 9:00 to 5:00 on June 2 and 3 and from 9:00 to 1:00 on June 4. During the General Sessions exhibitors are urged to have most of their representatives attend the meetings—equally valuable to suppliers and manufacturers.

METAL PRODUCTS STATISTICS

a current report on available production, shipment and sales figures for important products in the appliance and fabricated metal products manufacturing field

GAS WATER HEATERS — March shipments 228,100, 0.7 per cent over '57; January-March, 676,700, 4.2 per cent over '57.

GAS RANGES, BUILT-IN — March shipments 16,800, 7.0 per cent over '57; January-March, 42,600, 2.4 per cent over '57.

GAS RANGES, FREE STANDING — March shipments 133,200, 18.6 per cent below '57; January-March 370,300, 17.5 per cent below '57.

GAS FURNACES — March shipments 50,200, 2.7 per cent over '57; January-March, 139,400, 0.8 per cent over '57.

GAS FIRED BOILERS — March shipments 5,300, 10.2 per cent below '57; January-March, 15,700, 3.7 per cent below '57.

GAS CONVERSION BURNERS — March shipments 6,000; 25.9 per cent below '57; January-March, 20,000, 8.7 per cent below '57.

GAS FIRED WALL HEATERS — March shipments, 35 per cent over '57; January-March, 15 per cent over '57.

ELECTRIC REFRIGERATORS — February shipments 227,800, 24 per cent below '57; January-February, 433,900, 25 per cent below '57.

ELECTRIC FREEZERS — February shipments 66,500, 9 per cent below '57; January-February, 129,500, 9 per cent below '57.

ELECTRIC RANGES, BUILT-IN — February shipments 33,800, 18 per cent below '57; January-February, 64,000, 6 per cent below '57.

ELECTRIC RANGES, FREE STANDING — February shipments 74,900, 15 per cent below '57; January-February 153,700, 25 per cent below '57.

ELECTRIC WATER HEATERS — February shipments 58,000, 15 per cent below '57; January-February 119,700, 0.5 per cent over '57.

ELECTRIC DISHWASHERS — February shipments 29,200, 20 per cent below '57; January-February 59,600, 19 per cent below '57.

ELECTRIC FOOD WASTE DISPOSERS — February shipments 46,400, 7 per cent over '57; January-February, 87,200, 6 per cent below '57.

COMBINATION WASHER-DRYER — March factory sales 11,603, 46 per cent below '57; January-March, 37,092, 39 per cent below '57.

WASHERS, AUTOMATIC & SEMI-AUTOMATIC — March factory sales 214,174, 1 per cent over '57; January-March, 599,510, 16 per cent below '57.

WASHERS, WRINGERS & ALL OTHER — March factory sales 64,717, 14 per cent below '57; January-March, 180,633, 18 per cent below '57.

ELECTRIC DRYERS — March factory sales 50,220, 11 per cent below '57; January-March, 176,258, 27 per cent below '57.

GAS DRYERS — March factory sales, 20,089, 27 per cent below '57; January-March 71,259, 30 per cent below '57.

IRONERS — March factory sales, 2,452, 26 per cent below '57; January-March, 6,604, 42 per cent below '57. ;

VACUUM CLEANERS — March factory sales 291,418, 6.8 per cent below '57; January-March, 782,538, 12 per cent below '57.

METAL FURNITURE — March shipments 13 per cent below '57; January-March, 6 per cent below '57.

TELEVISION — February sales 360,413, 20 per cent below '57; January-February, 804,396, 14 per cent below '57.

RADIO — February sales, 876,891, 12 per cent below '57; January-February, 1,903,418, 6 per cent below '57.

COMPRESSOR BODIES (Including Automobile Units) — Shipments for January 315,318, 25 per cent below '57.

STEEL SHIPPING BARRELS & DRUMS — February shipments 2,322,982, 24 per cent below '57; January-February, 4,925,987, 16 per cent below '57.

STEEL PAILS — February shipments 4,606,299, 14 per cent below '57; January-February, 10,016,049, 13 per cent below '57.

TYPEWRITERS — March factory shipments 86,894; January-March, 230,637.

Sources for this information: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, American Home Laundry Manufacturers Association, Vacuum Cleaner Manufacturers Association, National Association of Furniture Manufacturers, Electronic Industries Association, and Air-Conditioning and Refrigeration Institute, U.S. Dept. of Commerce.

Editorial Brief — ☆☆☆☆

Lifetime of an automatic washer—five years

An Elmhurst, Illinois homemaker reports that she had a service man for her automatic washer a few days before this was dictated, and that after the work was done, the service man made the definite statement that the *life of an automatic washer is five years.*

This same homemaker owned an ABC Spinner washer (before the days of automatics) which gave 17 years of satisfactory service with a single service call. (This was to replace a spinner bearing.)

While the automatic washer referred to is much older than the five year life specified by the service man, we sincerely hope that this is not a common statement, for the men whose responsibility it is to keep today's automatics working satisfactorily. If this idea were to be instilled in the minds of large numbers of homemakers, it would hardly be helpful to the sale of automatics.

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

D. V. Tuttle Dies at 57

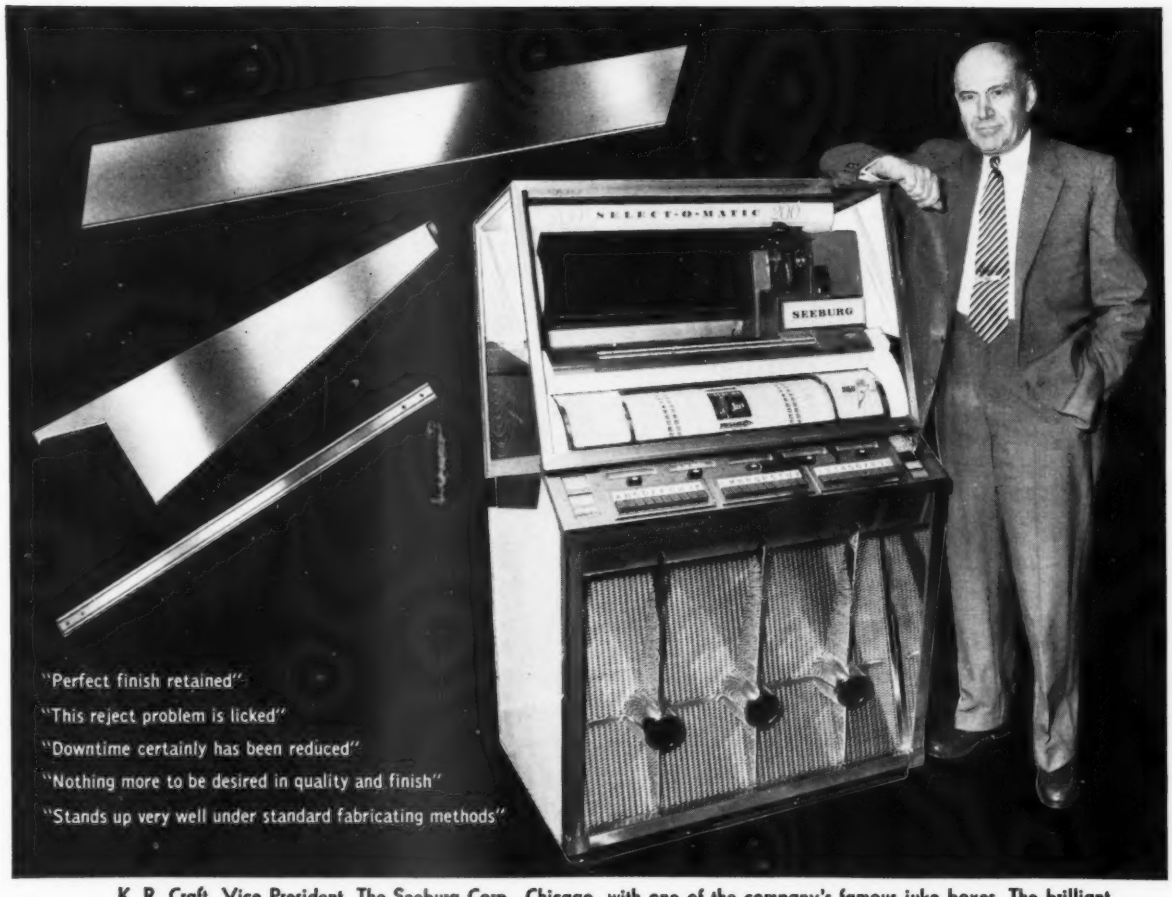
D. V. Tuttle, president of Tuttle Electric Products, Kirkland, Illinois, passed away April 15 at the age of 57. Prior to his position held at the time of his death Mr. Tuttle was with Hotpoint, in the early years of his career, following with positions at Tuttle and Kift and then Trundle Engineering, Cleveland, just before joining Tuttle Electric Products as president.

Siegler Corp. Sales and Earnings Up

For the nine-month period ended March 31, 1958, sales of The Siegler Corp. of Los Angeles, Calif., reached a record high of $57,450,000, it was announced recently by John G. Brooks, president. For the three month period ended March 31, 1958, Siegler sales were $18,170,000 as compared with sales for the same quarter a year ago of $9,101,043. "During an economic period when many companies are incurring losses, we are not only showing profitable operations," Brooks stated, "but results since the end of the reporting period indicate an upturn in both our sales and net income picture.

Norge's Answer to Appliance Service Education

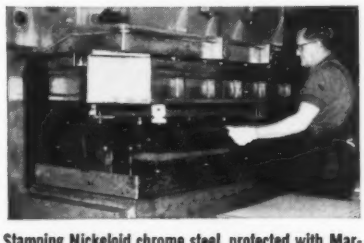
Norge Div., Borg Warner Corp., will mail service literature direct to dealers and service companies for the first time. The policy was disclosed May 8th by Elmer G. Fenton, director of national service.


"Perfect finish retained"
"This reject problem is licked"
"Downtime certainly has been reduced"
"Nothing more to be desired in quality and finish"
"Stands up very well under standard fabricating methods"
SEEBURG

K. R. Craft, Vice President, The Seeburg Corp., Chicago, with one of the company's famous juke boxes. The brilliant reflectivity and durability of Nickeloid pre-plated metals is an important factor in the product's eye-catching good looks.

NICKELOID METALS SAVE 4 PRODUCTION STEPS— REDUCE REJECTS FOR THE SEEBURG CORPORATION

Standard fabricating methods are used to stamp and form juke box trim. Nickeloid Metals eliminate machinery tie-up; rejects are less than 1%.



Stamping Nickeloid chrome steel, protected with Mar-Not adhesive-backed paper which is easily peeled off. Finished part will need no polishing.

Pre-Finished Design Material is Easily Worked With Standard Fabricating Methods

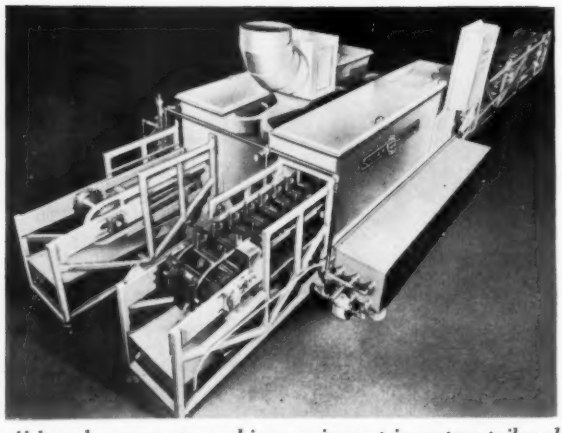
The Seeburg Corporation uses Nickeloid *pre-plated* chrome steel to achieve functional beauty and attention-value . . . economically. Before switching to Nickeloid, the company did its own cleaning, plating and buffing. The job required four — sometimes five more operations than are now necessary. According to Mr. Craft, "The tremendous cost of plating and buffing was not only more expensive and much more time consuming, but the finished product had to be inspected, and the rejections on plated and buffed metals was very much higher than it is with Nickeloid. Economically, the Nickeloid Metals have proved themselves in production."

Using standard fabricating methods, Nickeloid Metals need only be stamped and formed — then assembled. By capitalizing on this pre finished *method* of production, this leading manufacturer has eliminated the machinery formerly required for plating, polishing and buffing — saved four or five production steps, and is producing a better end product *with less manpower.* Can you use these advantages in *your* operation?

WRITE TODAY FOR FREE LITERATURE

NICKELOID METALS SINCE 1898

AMERICAN NICKELOID COMPANY
PERU 11, ILLINOIS



Although new parts washing equipment is custom-tailored to specific applications, it is assembled from standard components to adapt it to a wide range.

Industrial Developments

Automatic hot washer

A new high-speed method for automatic 'hot' washing and air drying of all types of parts has been developed. The method uses integrated parts handling through two stages of hot washing and a blow-off, or drying, stage. Cycle time at 100 per cent capacity is 15 seconds. Operation is completely automatic.

For further information, contact Dept. MPM, Gear-O-Mation Div., Michigan Tool Co., Detroit, Mich., or Special Projects Editor, METAL PRODUCTS MANUFACTURING.

Textured coating material

A new finish for electronic data-processing equipment, based on vinyl resins, is said to meet the perils of daily operations in busy offices. A tough, textured coating material, the finish is said to resist stains, perspiration, scratching, abrasion, and corrosion. When minor dents occur, they can be hammered out without refinishing equipment cases. The finish is said to have excellent color-retention and oxidation resistance, and makes possible brilliant new colors.

The coating is applied by the spray method and, as less time is required for the baking process, production is speeded up and equipment costs are significantly reduced.

For further information, contact Dept. MPM, Bakelite Co., Div. of Union Carbide Corp., 655 Madison Ave., New York 21, N. Y., or Special Projects Editor, METAL PRODUCTS MANUFACTURING.

Workman applies textured coating to part in an assemblyline system in front of a curtain of recirculating water. Part is given three coats of vinyl, then goes to oven for curing. Three more coats are applied before final bake. Coating bakes to a hard finish in 20 minutes, compared to full hour required for previous finish. Pebbly, leather-like surface is shown in lower left of photo. ➧

As each part is ground, its size is automatically measured to within a few millionths of an inch, and the measured size is automatically compared to the desired size. If the measured size of the part is different from the desired size, the fact is immediately recognized by the equipment and steps taken to correct the error.

Automatic control system

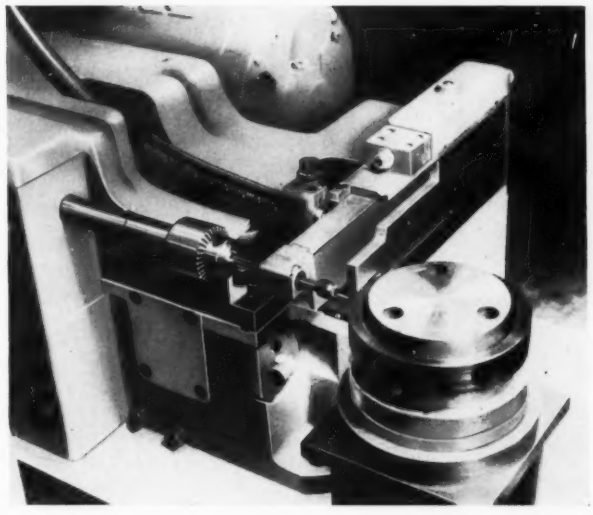
An automatic control system has been designed to automatically control the complete grinding operation on a centerless grinder. Called "Inchworm," the system includes maintenance of part diameter to extremely close tolerances, and segregation of parts into one of three grades: undersize, acceptable, or oversize. The system utilizes the feed back control principle to accomplish automatic size control.

For further information, contact Dept. MPM, Airborne Instruments Laboratory, Inc., 160 Old Country Rd., Mineola, L. I., N. Y., or Special Projects Editor, METAL PRODUCTS MANUFACTURING.

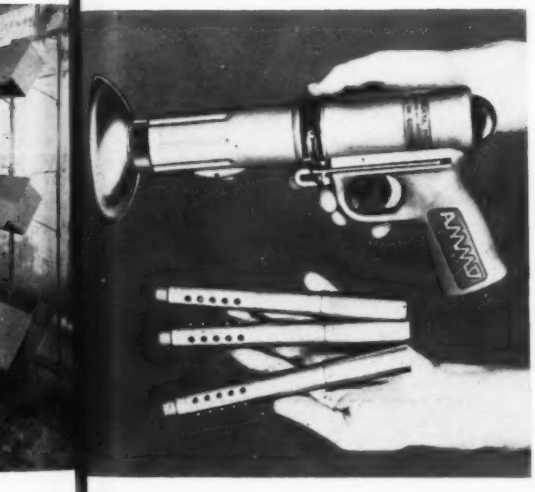
Set screw driver

A NEW building block for the high-speed, automated production line will help to streamline product assembly work and appreciably reduce fastening costs, it is claimed by the manufacturer. Called the Setomatic, the machine automatically feeds, inserts, and tightens socket set screws ranging in diameter from No. 6 (approximately 0.138 inch) up to 3/8 inch, in lengths up to 3/4 inch. It is stated that the machine can make up to 2500 complete installations an hour. The machine is being distributed on a rental basis.

For further information, contact Dept. MPM, Standard Pressed Steel Co., Jenkintown, Pa., or Special Projects Editor, METAL PRODUCTS MANUFACTURING.



Close-up of business end of machine, showing driver about to insert and tighten socket set screw in work piece. Screws feed down plastic tubing (behind driver) from vibrating hopper atop the unit. For high-speed, automated product assembly, the unit is said to be capable of driving up to 2500 set screws an hour.



Studgun offers lightweight, compact size, and ease of handling. Barrels are designed for fast changeover, and unit incorporates safety features to prevent accidental firing and to provide maximum safety to the operator.

Ammo studgun drives all pins

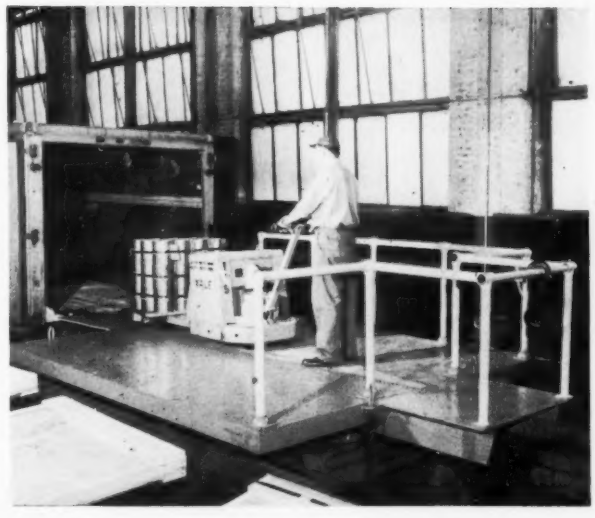
POWDER-ACTUATED "Studgun," built to handle all types of fasteners and drive all sizes of pins including the exclusive 5/16", combines all the functions of light, medium and heavy-duty models into one compact unit for maximum efficiency and economy in fastening to steel and concrete. By using three quickly-interchangeable barrels, the gun eliminates the need for separate tools for various sizes of pins. The operator is always able to select the most economical cartridge-pin combination for each job, and is not limited by his equipment to one or two sizes of pins. The tool's design minimizes noise, provides quick and easy loading and inspection, and has a special safety guard.

For further information, contact Dept. MPM, Ammo Products, Inc., 1100 20th St., N. W., Washington, D. C., or Special Projects Editor, METAL PRODUCTS MANUFACTURING.

Variable height loading dock

NEW portable elevator, called "Portelevator," maintains constant level with truck beds, eliminating the usual ramp, and permits the safe and speedy use of fork trucks. The elevator may be positioned, and removed from position, by overhead crane, and lends itself to use in areas such as a railroad siding. Load capacity is 10 tons, and lift is 22½ inches from 36½-inch minimum to 59-inch maximum. Lift speed is 13 inches per minute. Five hp is required.

For further information, contact Dept. MPM, The Hamilton Tool Co., Ninth St. at Hanover, Hamilton, Ohio, or Special Projects Editor, METAL PRODUCTS MANUFACTURING.



Level and safe way to load truck is demonstrated here. Elevator raises or lowers to height necessary to align load with truck bed or loading platform, enabling fork trucks to be safely used. Crane can be used to deposit pallets of materials, to be shunted onto truck bed by fork truck.

New plant has porcelain enamel slip circulating system

fluid regulator withstands abrasion and corrosion of enamel slip, thus enabling pumps to move slip at controlled velocity

INCLUDED in the new water heater plant built by the Day & Night Division of Carrier Corporation is a complete porcelain enamel slip circulating system.

Circulating systems have long been used in the organic paint field to supply controlled viscosity and controlled temperature paint to the point of use.

One reason that this system has been in common use in the porcelain enamel field was due to the difficulty of finding a fluid regulator that would withstand the abrasion and corrosion of enamel slip or handle this fast settling liquid. With the introduction of such a regulator, it is now possible to obtain pumps which will move the slip through a piping system at a controlled velocity to the various points of application, control the delivery to the spray gun and then return the balance of the material to the mill room and into the mixing tanks.

The piping system at Day & Night basically consists of:

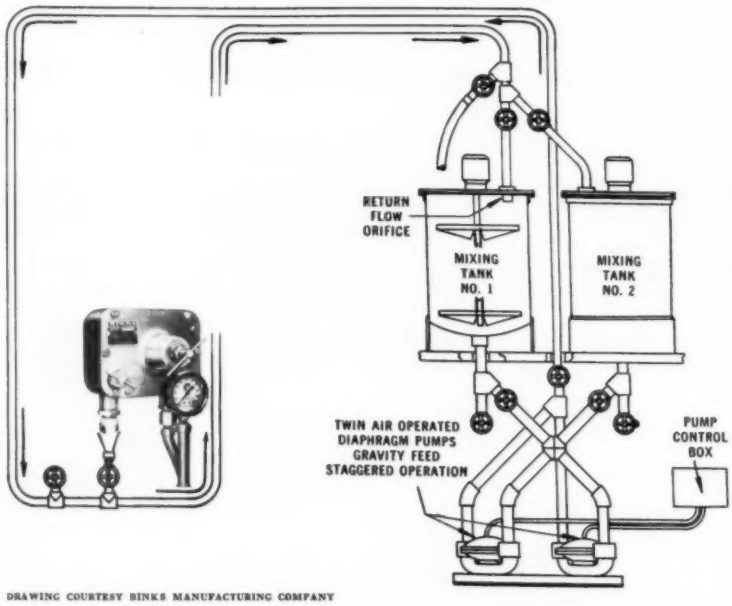
2 – 125 gallon capacity stainless steel mixing tanks with electric motor driven agitators

2 – Stainless steel, rubber lined, air operated diaphragm pumps with inter-tank connections

3 – Stainless steel material regulators, one for each spray gun station, and approximately 300 feet of .049 wall type 316 welded stainless steel tubing and fittings.

With such a continuous, closed system, each gun station, using a material regulator receives the same consistency enamel in the volume required for each application. To maintain a back pressure in this line, a simple restricted orifice fitting was inserted in the return line at the mixing tank.

Ceramic Circulating System Pump Diagram


RETURN FLOW ORIFICE
MIXING TANK NO. 1
MIXING TANK NO. 2
TWIN AIR OPERATED DIAPHRAGM PUMPS GRAVITY FEED STAGGERED OPERATION
PUMP CONTROL BOX

DRAWING COURTESY BINKS MANUFACTURING COMPANY

SUPPLIER PERSONALS

Harry T. Marks, president, Ferro Corp., recently announced the appointment of **Elmer W. Dany** to the position of executive vice president and to the board of directors of Patterson Foundry & Machine Co., East Liverpool, Ohio, a Ferro subsidiary.

Dany, a 31-year veteran of Ferro, is vice president of Ferro Corp. in charge of the furnace engineering division, and will continue his duties in that division while assuming his new responsibilities at Patterson.

Dany is the holder of numerous patents in the porcelain enamel field, and is a recognized authority on porcelain enameling furnaces, having supervised the design and installation of many of the country's leading enameling plants. *(See "A new era for enameling furnaces," Page 84, September, 1956 issue of Finish, now* MPM*).*

Louis Putze, president, recently announced that **Charles M. Stainton** has joined Controls Co. of America as vice president and director of marketing, with headquarters in the company's executive offices at Schiller Park. Sales of the company's Soreng and A-P Controls division product lines will be co-ordinated under Stainton's direction, Putze said.

Before joining Controls Co., Stainton was vice president and director of sales and planning for Robertshaw-Fulton Controls Co.

Controls Co. of America is a leading manufacturer of controls for the air conditioning, automotive, refrigeration, heating and appliance industries, and for the guided missile, computer, and electronics fields.

DANY

STAINTON

Homer J. Livingston, president of the First National Bank, Chicago, has been nominated for election as a director of Inland Steel Co. at its annual stockholders meeting on April 30. He will replace on the board Edward E. Brown, chairman of the bank, who has

to Page 81 →

TINT-TANIUMS

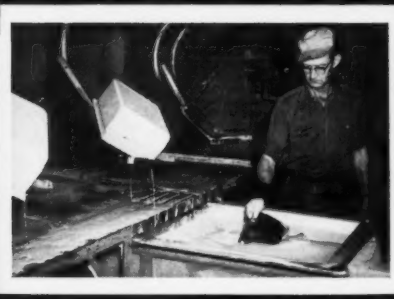
GIVE RCA WHIRLPOOL REFRIGERATORS

manufactured by Whirlpool Corporation

MORE SALES APPEAL

PROCESSING LINERS AND VEGETABLE CRISPERS IN TINT-TANIUMS AT WHIRLPOOL CORPORATION.

Tint-Taniums are easily applied by either spraying or dipping (without streaking and without oxide separation) depending upon the requirements of individual parts involved. These pictures taken on the refrigerator production line at Whirlpool Corporation, Evansville, show liners and vegetable crispers being processed in Tint-Taniums.



an exclusive Chicago Vit Development

To capture its share of today's style-conscious, consumer market, Whirlpool Corporation has incorporated fresh sales appeal in its 1958 line of refrigerators in a number of ways. One of them is through the use of Tint-Taniums on liners and vegetable crispers. These colored frits, made exclusively by Chicago Vit, provide a number of distinct production advantages foremost among them being unequalled color stability. They are handled as easily as white titanium frits, and completely eliminate the chance for human error that exists in systems where colors are added at the mill. Tint-Taniums also bring you a number of distinct economic advantages. So, if you plan to use colors in your new products, you'll find it profitable to choose Tint-Taniums. There's nothing else like them!

Chicago Vitreous

CORPORATION

A Division of The Eagle-Picher Company

1425 S. 55th Court, Cicero 50, Illinois

Tint-Tanium is a copyrighted name

1918-1958 • 40 YEARS OF SERVICE TO THE PORCELAIN ENAMEL INDUSTRY

Cleaning stainless work in the plant

by W. E. McFee • SUPERVISOR, PRODUCT INFORMATION SERVICE, ARMCO STEEL CORP.

MPM EXCLUSIVE FEATURE

Stainless steels are well known for their beauty and resistance to corrosion. Proper cleaning during and after fabricating safeguards these important qualities.

Here are recommendations for shop cleaning that will pay off in lasting good looks and long service life for stainless steel parts and products.

For sound welds and strong soldered joints, remove all dirt and grease from surfaces to be joined. Good solvents are turpentine, naphtha, alcohol, and white or unleaded gasoline.

Photo 1 — After Welding

Chip off weld scale or remove with a stainless steel wire brush. (See Precautions.) When scale is gone, it cannot cause weld discoloration in service.

If not taken off during normal weld finishing, heat tint can still be removed by use of abrasive or chemical cleaners, or by use of a special electrolytic process.

Flux should be washed off with a brush and plenty of clean water immediately after soldering. A hose is ideal, but fresh water from a bucket will do a satisfactory job. Change water frequently.

Neutralizing the flux with ammonia or washing soda is not enough, because salts formed can cause pitting or discoloration if they are not completely washed away. Neutralizing is not necessary when plenty of clean water is used. Scrubbing should always be followed by a thorough clear water rinse.

Photo 2 — Remove Embedded Metal

Passivation (nitric acid cleaning) removes particles of metal and dirt that may have become embedded in stainless steel during fabrication. These could cause trouble later.

An easily-prepared solution that is effective for any type of stainless is a 20 per cent nitric acid solution with 4-6 per cent sodium dichromate at 110-120 F.

This is how the solution is used. If possible, dip the whole part, leaving it in the solution from 15 to 30 minutes. Rinse well with clear water. If dipping is not possible, first rinse the stainless work with water. Then swab it with the solution several times, leaving it wet for 30 minutes.

Follow swabbing with a thorough clear water rinse. (See Precautions.)

If embedded metal has started to rust, nitric acid won't remove it. Swab with a 25 to 50 per cent solution of warm phosphoric acid until rust disappears. Then rinse and dry. Proprietary chemical cleaners may also be used for this purpose. (See Precautions.)

To remove trademarks, stencil marks, grease pencil, fingerprints, oil, grease, tar or wax from stainless, first try a sudsy solution of detergent and water. If it doesn't wash stains away, add 25 per cent by volume carbon tetrachloride. Stir vigorously for each use as the carbon tetrachloride separates out. Wipe this solution on the work. (See Precautions.) After a few minutes, rub again. Rinse with clear water. If marks remain try it again, or use one of the proprietary chemical cleaners.

Photo 3 — Proprietary Chemical Cleaners

Sometimes when dirt or discolorations resist normal cleaning methods, proprietary chemical cleaners are the answer. They remove dirt, grease, heat tint, light and heavy discoloration, rust and other stains. Properly used, they will not harm stainless steel. Unlike powder cleaners, they will not cause bright "polish" spots on 2B finish stainless. Trade names of several good chemical cleaners, manufacturer's addresses, and recommended proportions are given in the following table.

Procedures are much the same for all proprietary cleaners recommended for stainless steel.

1. Keep in a stainless steel, glass, porcelain enameled, or wooden container. 2. Before applying the cleaner, first wash the part with plenty of clean water. 3. Swab on with a cloth or sponge. 4. Give the cleaner plenty of time to work. 5. Rinse with clear water. 6. Dry with soft cloth. 7. Repeat if necessary.

Sometimes it is advisable to let the cleaner stand on stubborn stains for several hours or more. Always rinse afterwards and dry. (See Precautions.)

Precautions

- Always use stainless steel wool or brushes, never carbon steel.
- Wear rubber or synthetic rubber gloves, goggles, and a rubber apron when using acid or proprietary chemical cleaners.
- Use carbon tetrachloride only in well-ventilated places. *Don't smoke* while using it because poisonous phosgene gas can be formed when carbon tetrachloride's vapors are drawn through burning tobacco.
- Chemical cleaners possibly may harm paint, wood, or fabrics, or give galvanized steel a dull grey color.

Trade Name	Manufacturer	Recommended Proportions
1. Dilac	The Diversey Corp. 1820 Roscoe St. Chicago 13, Ill.	All will work full strength, but manufacturers' directions will outline proportions that best combine cleaning effectiveness and economy. If specific directions aren't available, here is a good method to follow: Mix one part cleaner with two parts water. Then vary proportions to determine those that do your job best and most economically.
2. Metalprep #10	Neilson Chemical Co. 6564 Benson St. Detroit 7, Mich.	
3. Texo #12 4. Texo N. Y.	Texo Corp. 2200 Dana Ave. Cincinnati 7, Ohio	
5. Oakite #33	Oakite Products, Inc. 22 Thames St. New York. N. Y.	

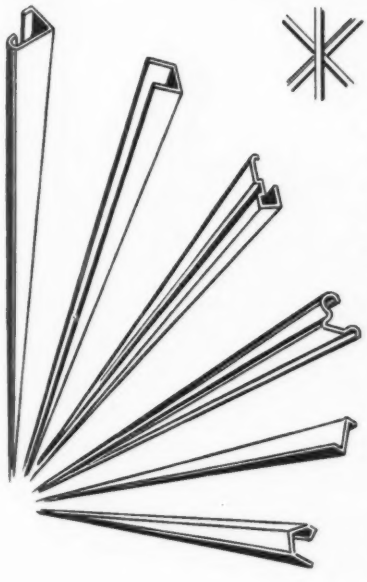
Photo 1 ◆

Photo 2 ◆

◆ Photo 3

Design for Sales

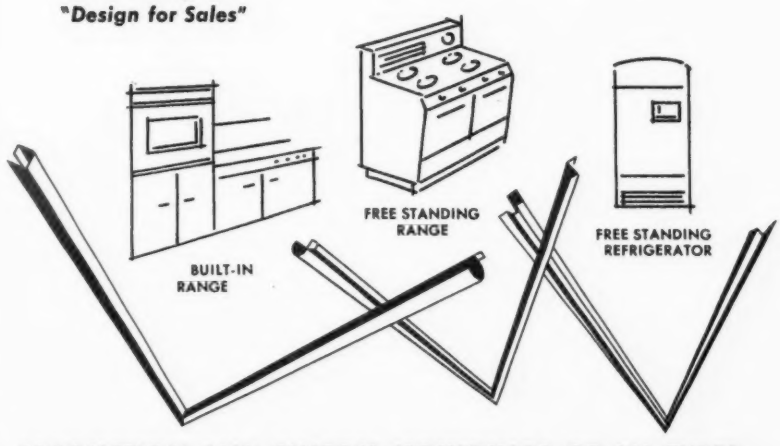
WITH REDALL METAL MOULDINGS



Whatever appliance or similar fabricated metal product your company produces, Redall Industries can answer your moulding needs. We are specialists in metal moulding. We are also experienced in the use of prefinished metals of various colors. We can form any rolled type of moulding: coin flat material up to 1/16" thickness, roll coined material into sections, and roll patterns on metal. We have a wide variety of production mouldings to choose from or we can meet your requirements for custom designs.

In addition to having complete facilities for the production of metal mouldings Redall Industries provides facilities for assembly work, light stamping, and tool and die work. In addition, we can supply highly accurate stretch bending equipment and tools and rolls for roll-forming equipment.

Write today for "Design for Sales"



PRODUCTION AND CUSTOM MOULDINGS OF ALL TYPES

Redall Industries

LEXINGTON 1, MICHIGAN

NEW

SUPPLIES & EQUIPMENT

Big Socket Screw Heads Carry up to Twice the Load

A line of "Unbrako" socket head cap screws with significantly larger head diameters, permitting the fasteners to do up to 2-1/3 times as much work as before, is being introduced.

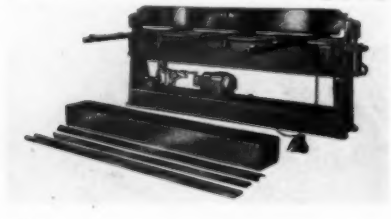
This head diameter increase alone, a maximum of only 17 per cent in the larger sizes, permits the screws to be loaded as much as 134 per cent more—or 2-1/3 times as much—before indenting into the material being fastened. In tension bolting, the higher loading—and with it, the higher initial tightening permissible—means greater clamping force and longer life under live loads.

For further information, contact Dept. MPM, Standard Pressed Steel Co., Jenkintown, Pa.

New Speed-Bender for Sheet Metal Work

The "Speed-Bender" is particularly suited to production bending of heating and ventilating duct sections and similar long, light-gauge work.

The machine has a bending length of 8 feet. Besides adjustable front gauges, there are two disappearing pin gauges in the lower die, which can be used to bend from notches in the sheet. As standard, the machine is furnished with a removable 90° female die. The ram, also removable and adjustable, has a 2-inch stroke, and is an acute-angle male die with the bending edge induction hardened for longer life.



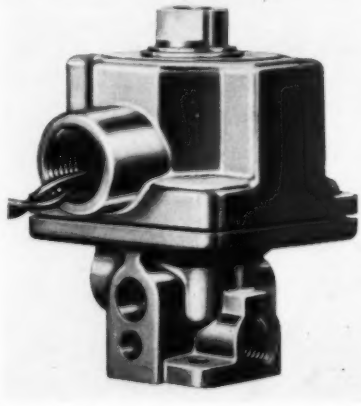
Power operation is by two cylinders and a balanced vane-type hydraulic pump driven by a direct-connected 3 hp. motor. On-off push-button station is mounted on front of machine. Operation is controlled by a foot switch that is movable to suit operator's convenience.

For further information, contact Dept. MPM, Dreis & Krump Mfg. Co., 7400 S. Loomis Blvd., Chicago 36, Ill.

Three-way Solenoid Valves

A new line of three-way solenoid valves for use with medium-size cylinders has been announced.

Called the A Series, the new valve line bridges the gab between the V5 line used with small cylinders and the M3 line used with large cylinders. The design of this new line permits economical and efficient operation of medium-size cylinders as well as faster operation of smaller cylinders where increased cycling speed is a necessity, it is claimed.



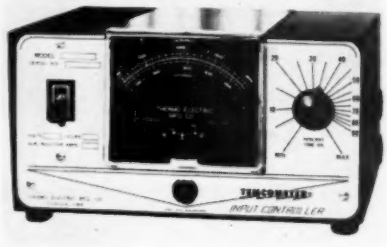
In bringing out the new line, the firm also announced completion of an important step in its goal of making a full line of valves job-rated to customers' requirements.

For further information, contact Dept. A194, Skinner Electric Valve Div., 105 Edgewood Ave., New Britain, Conn.

New Temcometer Controller

Temcometer controllers, type 500, are provided with a new-style, wide-scale pyrometer having white characters on a black background; the easy-to-read double scale is accurately calibrated to 2000° F. and 1000° C. Type 500-1 units have a decorative insert in place of the pyrometer; they can easily be converted for temperature indication simply by replacing the insert with a pyrometer.

For further information, contact Dept. MPM, Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa.



Workholding Devices

Custom-made A1SiMag ceramic or Grade A Lava workholding devices offer many advantages for applications involving heat, abrasion, impact, chemical attack.

Custom-made jigs, fixtures, support rings, and workholding devices, with excellent thermal shock resistance and dimensional stability, are available.

For experimental purposes, for short runs, or where small quantities are involved, many designers prefer to "machine their own" from an inert material known as Grade A Lava, which can be cut to very accurate dimensions with ordinary tools for working wood or soft metals. The material is available in blocks up to 6″ x 12″ x 20″. Even larger sizes may be available on special request.

For complete information on Grade A Lava or A1SiMag ceramic workholding devices for your particular application, send blueprint or sketch with details of operating conditions and quantities involved to Dept. MPM, American Lava Corp., Cherokee Blvd. & Mfgrs. Rd., Chattanooga 5, Tenn.

that spells both lower manufacturing costs and uninterrupted production schedules.

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THE **O. HOMMEL** COMPANY

Dept. MPM-658

PITTSBURGH 30, PA.

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Range Timer and Minute Minder

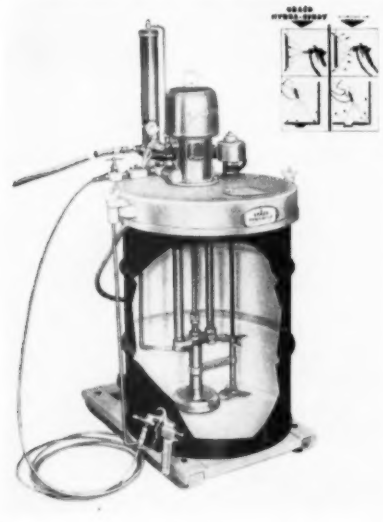
A combination fully-automatic range timer and one-hour electric minute minder in the 5810 series is now available. The unit has an exclusive bell chime reminder signal, and standard features include lubeless motor bearings, blue-gray and silver dial, black set knobs, chrome bezel, 110V 60-cycle time cycle, and 30-ampere switch rating, plus single pole, double throw — double pole, single throw switches. Dial and set knob colors can be optional.

For further information, contact Dept. MPM, The Lux Clock Mfg. Co., 95 Johnson St., Waterbury 20, Conn.

Paint Spraying Process Eliminates Atomizing Air

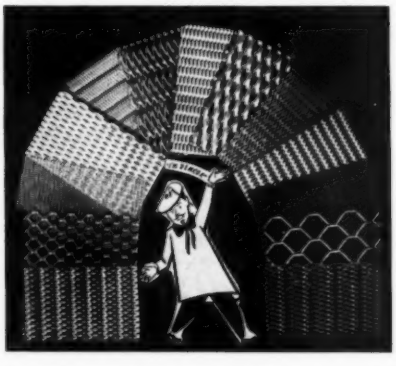
A paint spraying process that eliminates the need for atomizing air, heat, or excessive solvents has been announced. Called "Hydra-Spray," the unit utilizes a combination of high fluid pressure and a small fluid nozzle to create fine material breakup without atomizing air, thereby, it is claimed, reducing overspray, bounce-back (upper right, inset photo), and hazardous fumes to an absolute minimum.

For further information, contact Dept. MPM, Gray Co., Inc., 1018 Sibley St., N. E., Minneapolis 13, Minn.



Multi-designed Expanded Metal

Tool designs have been perfected making possible the manufacture on a production basis of hundreds of expanded metal patterns, it is stated by the manufacturer. Some patterns make it possible to manufacture two or more characters or designs within a single pattern. These vary in appearance in openings from 1/16 inch to as large as 1½ inch, and can vary in gauge from .015 up to as heavy as 12 gauge. Company engineers have perfected a method of manufacturing light gauge meshes in coil form so that the raw material can be processed through slitter lines and automatic shears for mass production application. For more information, contact Dept. MPM, Designers Metal Corp., 529 E. 159th St., Harvey, Ill.



Thermosetting Acrylic Baking Enamel

A thermosetting acrylic baking enamel is now being offered in three series, made possible through continued research and chemical modification of resins, it is claimed by the manufacturer. The new series, known as Duracron 200 and 300 resins, is said to possess slightly different but unique properties in the baking enamels field.

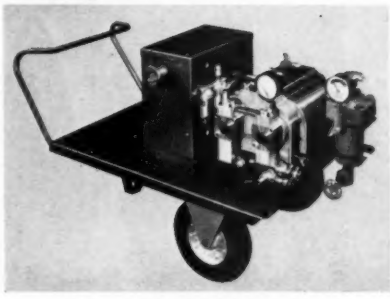
For further information, contact Dept. MPM, Pittsburgh Plate Glass Co., 632 Ft. Duquesne Blvd., Pittsburgh 22, Pa.

Corrosion-Resistant Coating

A corrosion-resistant coating for plant floors, walls, etc., called Penntrowel, is said to offer a combination of the best features of durable, corrosion-resistant coatings. The material is a thermosetting coating which, it is claimed by the manufacturer, resists strong acids (including hydrofluoric), alkalis, and solvents. Field tests in chemical plants are said to have proved that it supports heavy duty traffic.

For further information, contact Dept. MPM, Pennsalt Chemicals Corp., Three Penn Center, Philadelphia 2, Pa.

Pumping Unit



A pumping unit for use in airless and hydraulic spray coating systems has been announced. The unit, designated as Model AP, is said to combine light weight with rugged construction. In addition to features such as overlapping piston action, automatic speed control, and self-cleaning piston rods, the model is said to feature throw-away packing glands, chrome plated air cylinders, and complete accessibility of all expendable parts with a minimum of disassembly.

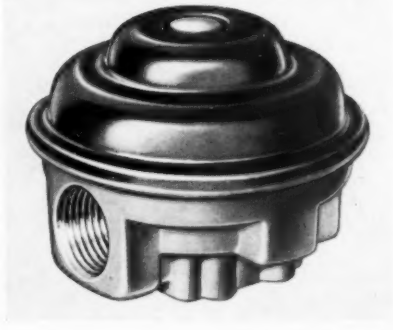
Designed to operate at pressures up to 1500 psi, and at temperatures up to 500° F., the pump can be used for applying all types of coating materials, including plastisols and hot melt resinous materials, and is designed for either siphon or pressure feed operation.

For further information, contact Dept. MPM, Nordson Corp., Amherst, Ohio.

Gas Pressure Regulator for Appliances

The Series 932 appliance gas pressure regulators are designed for water heaters, dryers, heating equipment, and similar applications. They are said to provide uniform flow of gas necessary for proper combustion on gas appliances. Regulators are currently supplied in ¼″, ⅜″, and ½″ small sizes only, and are AGA listed. They may be supplied with an automatic built-in vent limiting assembly, and orifice-type vent or, for the ½″ S size only, ⅛″ NPT vent connection is available.

For further information, contact Dept. MPM, Penn Controls, Inc., Goshen, Ind.



Enameled Steel

→ *from Page 52*

or large parts can be easily loaded. The loop and disc electrostatic atomizing heads are of the latest type and design, and can be regulated to make a seven and one-half-foot vertical stroke.

The three-stage cleaning machine is 35 feet in length, and is U-shaped. Provision has been made for the addition of two more loop and disc electrostatic units, enabling two separate finishes to be applied in one operation.

The baking oven measures 40 feet in length, and is heated by infra-red refractory burners. The conveyor makes a U-shaped loop through the baking oven and, upon emerging, the conveyor line assumes a right angle with the incoming conveyor loop. The emerging conveyor line forms a U and a 90°-turn to complete the entire conveying line.

The wide variety of well-engineered equipment at Enameled Steel, coupled with years of experience in job shop painting, results in an operation that gives many advantages to their customers. Every one of the approximately 100 employees at this plant is continually striving to improve the over-all operation. An incentive plan, based on the proportion of profit made per sales dollar, enables the employees to share in the profits of the company. The management team, likewise, is continually striving to improve methods and over-all efficiency.

AHLMA endorses

→ *from Page 33*

Sayre pointed to the fact that in the peak year, 1955, there were 60 million employed, while in February of 1958 there were 62 million. He also cited an increase in personal income, registered at $7.3 billion over a year ago, disbursements for wages and salaries at $2.2 billion over a year ago, and retail sales up 1.3 per cent.

Yet, he said, there is a completely negative buying attitude and with savings up $2 billion since January, and installment debt *down* $435 million in February, there is an actual recession in the *durable* goods industry.

Sayre referred to the psychological effect of "scare" headlines which have been so prominent in the newspapers and some national magazines, and told what was being done to influence important editors and publishers to give equal consideration to the plus values in the picture. Sayre stressed the importance of constructive action on the part of newspapers, trade publications and consumer publications. He pointed to the work of the advertising council, American Management Association, and other similar organizations that are lining up to change America's buying attitude and to "get back to selling." With the aid of a flip card presentation, Sayre outlined a complete plan for a "buy it now" program on a national scale to be operated at the local level.

(For a complete outline of the "buy it now" program, contact Reader Service Bureau, MPM*).*

The AHLMA meeting ended on an optimistic note, and the anouncement was made that next year's annual meeting will be held at The Broadmoor, Colorado Springs, Colo.

June Market to be Held Concurrently at Both Marts

The International Home Furnishings Market is scheduled to be held June 16-26 at the American Furniture Mart, and June 16-27 at The Merchandise Mart, Chicago.

Thousands of buyers from across the nation will converge on both sites to purchase their requirements for the last six months of the year.

THREADED PARTS?
Get CUYAHOGA'S PRICES!
We make to your order . . .
Stud Clips, Moulding Clips, Stampings, Threaded Parts, Special Cold Headings, Linkage Rods, Screw Fasteners, Springs.
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REPUBLIC INDUSTRIAL CORPORATION
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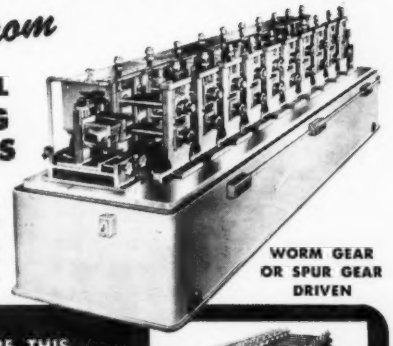
STEADY, HIGH-OUTPUT PRODUCTION!

Dahlstrom COLD ROLL FORMING MACHINES

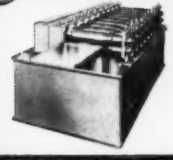
Our design, construction, and engineering will give you fast, dependable operation with close tolerances for best results at lowest cost.



WORM GEAR OR SPUR GEAR DRIVEN

COMPARE THIS CONSTRUCTION

- All-welded, anti-friction bearings, alloy steel shafts.
- Worm gear type features: Greater roll diameter range; maximum vertical adjustment; infinite adjustment of outboard supports; hardened alloy steel gears; individual gear box design.
- Spur gear type features: Efficient increased gear capacity; hardened alloy steel gears; close horizontal center to center.
- Available in shaft diameter range of 1" to 3"



OPTIONAL EQUIPMENT AVAILABLE

Coolant system; variable drive; straightener; brake and clutch. Give complete specifications as to requirements for quotation

Dahlstrom MACHINE WORKS INCORPORATED

Roll forming machines, flying cut-off presses, coil reels, coil lifts, roll straighteners, press feed lines, decoiling and shearing lines.

4233 West Belmont Ave., Chicago 41, Ill., Phone: SPring 7-3670

NEW INDUSTRIAL LITERATURE

Engineering Manual on Electrostatic Painting

A new 74-page general engineering manual covering newly-developed electrostatic painting systems is available. These manuals are available to anyone planning a new painting system and serve as a guide in designing the proper type of system for maximum economy. An engineering service and a laboratory testing service is provided without charge or obligation. Write METAL PRODUCTS MANUFACTURING, York St. at Park Ave., Elmhurst, Ill.

Cleaners for Porcelain Enameling or Painting

A new, heavy duty spray cleaner for all drawing compounds is available which is nonfoaming, has long life, stands up under heavy soil loads, according to the manufacturer. It is especially designed for cleaning prior to porcelain enameling.

In the painting department, a phosphate coating can be used on steel, zinc or aluminum to provide a superior base for paint and greatly increase corrosion resistance, according to the manufacturer. For further information on these chemicals, contact Dept. 3064, Wyandotte Chemicals Corp., Wyandotte, Mich.

Thermo-Setting Acrylic Enamel

This new brochure contains information about Duracron a thermo-setting acrylic enamel. It is claimed that this new material has superior adhesion, color and gloss retention, durability, flexibility and resistance to chemicals, grease, humidity, moisture, salt spray, stains and impact for a wide variety of end uses. Write Dept. MPM, Pittsburgh Plate Glass Co., Industrial Finishes Div., 1 Gateway Center, Pittsburgh, Pa.

Brochure on High Production Press

If your manufacturing operation calls for the fabrication of metal parts at as high a production rate as possible you should be interested in reading this brochure on the "Flying Press." Write Dept MPM, Wean Equipment Corp., 22828 Lakeland Blvd., Cleveland 17, Ohio.

Zinc Coated Steel Grips Paint

A special steel which is coated with a protective layer of zinc on both sides is available which is said to grip paint or baked enamel without any treatment. This zinc coating is said not to flake or peel off in fabrication. For further information, write Dept. MPM, Armco Steel Corp., 328 Curtis St., Middletown, Ohio.

Stainless Steel for Washers and Dryers

Better than ever performance and sales appeal are said to be assured by the use of stainless steel for tubs and drums of washers and dryers. Its gleaming, smooth, hard surface provides maximum protection for the finest fabrics, according to the manufacturer. This stainless steel is also said to be unaffected by dyes, soaps or detergents. For more information on Enduro stainless steel, write Dept. MG-5241-A, Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio.

Solenoid Selector and Free New Bulletin

A complete booklet describing the many applications of solendoids is available, along with a solenoid selector that quickly and easily matches a solenoid to a specific application. Applications include valve actuation, clutch operation, switch function, metering devices, shutter and damper control, and many other operations. For the free bulletin and solenoid selector, contact METAL PRODUCTS MANUFACTURING, York St. at Park Ave., Elmhurst, Ill.

Operate Processing Ovens at 800°

An automobile radiator manufacturer recently installed two parallel ovens that normally operate at 800° F. for the express purpose of soldering radiator tubes and center cores. Each oven has 6 heating zones — controls, temperature recorders, safety devices, and automatic emergency cut-offs contained in one control panel. Emergency temperatures up to 1000° F. are obtainable with these ovens. For more information, write Dept. MPM for catalog A-658, The R. C. Mahon Co., Detroit 34, Mich.

Booklet Describes Facilities of Fastener Company

An extremely informative bulletin is available which describes the facilities, departments, and warehousing available from the Universal Screw Co. The booklet is very colorful and takes the reader on a trip through the company. It follows each step in manufacturing precision quality fasteners for industry. For the booklet, write to Dept. MPM, Universal Screw Co., 2401 Brummel Place, Evanston, Ill.

Automatic Arc Welding Bulletin

A new arc welding bulletin is available which describes a number of different machines for this purpose. This company builds automatic arc welding machines, incorporating several labor saving devices. One machine specializes in welding home laundry dryer inner hub assemblies, for instance. A complete line of standard-type spot, projection, seam and flash-butt welders are available. For the informative folder, write Dept. MPM, Resistance Welder Corp., Bay City, Mich.

Illustrated Booklet on Metal Cleaning

This is a 44-page illustrated booklet called "Some good things to know about metal cleaning." It covers such subjects as: tank cleeaning methods, machine cleaning methods, ultrasonic cleaning, pickling, deoxidizing, bright dipping, applying zinc phosphate coatings, etc. Write Dept MPM, Oakite Products, Inc., 17 Rector St., New York 6, N. Y.

Corrugating Sheets With Roll Forming Machine

It is now said to be possible to corrugate 20 through 28 gauge galvanized steel, aluminized steel, plain and embossed aluminum. A new roll forming machine available requires only vertical adjustment for gauge range. Roller die tooling is available for ½″ or ⅞″ depth. The operating speed of the machine is 150′ per minute, and it is claimed that an excellent control of coverage and depth is possible. For complete information, contact Metal Products Manufacturing, York St. at Park Ave., Elmhurst, Ill.

Electrolytic Zinc-Coated Steel

This free brochure describes the qualities of this company's electrolytic zinc-coated steel for both outdoor and indoor use. For complete information on Weirzin, Weirton Steel Co., Dept. R-15, Weirton, W. Va.

FICTION and FACT

FICTION: Conversion From Dry Booth to RP Paint Arrestor Equipped Paint Spray Booths is Complicated.

FACT: R P Paint Arrestors are Basically Air Filters and are as Easy as Filters to install.

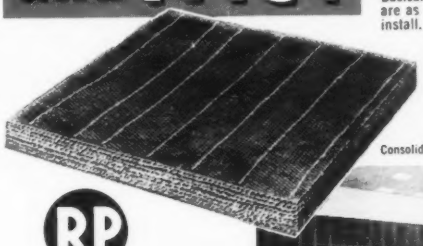


Photo Courtesy Consolidated Freightways, Chicago

RP

PAINT ARRESTORS

R P Paint Arrestors require no special construction and can be installed in any dry-type spray booth...quickly and simply. They can be mounted in vertical, horizontal or "V" banks... and require no plumbing, pumps nor special wiring. Maintenance costs are low, too, involving only the replacement of economical Paint Arrestors. To reduce down-time, save floor space, increase paint spray booth efficiency, write for complete information on R P Paint Arrestors.

Products of Research RP

RESEARCH PRODUCTS *Corporation*
Dept. 39, Madison 10, Wis.

DESIGNING OR PRODUCING A UNIT REQUIRING AIR MOVEMENT?...

Investigate

DE-STA-CO **BLOWER HOUSINGS-**

1 **complete line** — components and assemblies for wheels 3¼" to 9⅝" dia. . . . Low unit cost!

2 **exclusive process** — housings assembled by exclusive DE-STA-CO equipment.

3 **all widths** — assemblies for any-width wheel.

4 **easily modified** — most piercing, drilling, forming and spot-welding accomplished without tooling costs.

5 **complete stock** — standard sideplates or integral-inlet type.

Send your prints for quotations! . . . Or, if practical, our experienced engineering staff will recommend an adaptation of a DE-STA-CO Standard Unit, to reduce tooling and other costs! . . . Write for literature and prints!

Investigate DE-STA-CO **DETROIT STAMPING COMPANY**
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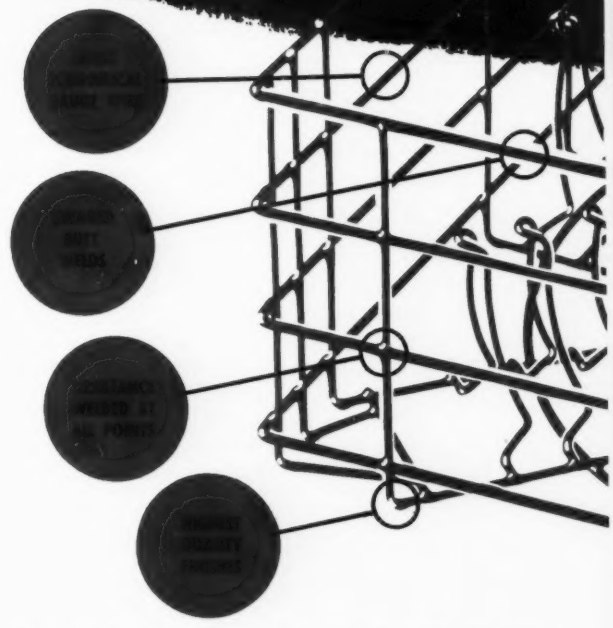
BLOWER HOUSINGS

We Make Them Better



Attention to many small but important details add up to highest quality in the final product. Our policy here at Peerless dictates that quality must never be sacrificed to lower the price. Instead, lower costs are often attained through design modifications in our pilot models by simplified fabrication procedures which do not sacrifice quality. Here is where knowledge and experience combine to form wire products of the highest standards.

You undoubtedly have cost problems in your formed wire product components. We specialize in working to reduce or eliminate cost problems. We've been doing it since 1910.

Our method is simple. Send us your drawings for a quotation by return mail.

Peerless **FORMED WIRE PRODUCTS**

PEERLESS WIRE GOODS COMPANY, INC.
2702 FERRY STREET • LAFAYETTE, INDIANA
Peerless Products Please
ESTABLISHED 1910

New Literature

→ *from Page 70*

Maximum Finishing Oven Efficiency

Six questions are answered in a new booklet which carries the title above. Some of these are: Does the finishing system have capacity for increased production?; Is the equipment simple enough to allow easy maintenance?; What type of materials handling is best suited for a particular process in production? These are just a few of the questions answered in this booklet. For free copy, write METAL PRODUCTS MANUFACTURING, York St. at Park Ave., Elmhurst, Ill.

Booklet Offered on Ovens, Dryers and Heaters

A new eight-page, two-color booklet is available pertaining to ovens, heaters and dryers used to produce, what the manufacturer calls, "engineered atmospheres" required for curing, drying and baking finishes. Containing more than two dozen photographs, the booklet illustrates applications of equipment in baking cores, finishing metal parts, preparing metal for painting and providing similar services throughout industry. Included in the booklet is information on indirect oil or gas fired heaters, a shell-type direct air heater, a tubular type indirect air heater, and the so-called Ross Supertherm high pressure hot water heating system. Copies of the booklet may be obtained from Dept. MPM, J. O. Ross Engineering Div. of Midland-Ross Corp., 444 Madison Ave., New York, N. Y.

Quality Control Procedures in Chemical Milling

The sixth in a series of design bulletins directed at design and production engineers is now available. The standards of quality control set up by this company are said to exceed, in most instances, the requirements of performance called for by the military and industry. This latest design bulletin will assist design and production personnel to gauge what chemical milling can do for them, according to the manufacturer. It gives the stages at which inspections are performed, the tolerances that are obtainable and the surface finishes that will result on metals like aluminum, steel, magnesium, titanium, etc. For copies contact Dept. MPM, United States Chemical Milling Corp., 1700 Rosecrans Ave., Manhattan Beach, Calif.

Stock List and Selection Guide for Solenoid Valves

The designers and manufacturers of ASCO Solenoid Valves, have prepared an eight page stock list on valves available for immediate delivery. Complete in every respect, according to the manufacturer, the new stock list contains prices, valve ratings, flow diagrams, illustrations, engineering data, etc. For complete information, write Dept. MPM for ASCO Stock List No. 505, Automatic Switch Co., Hanover Rd., Florham Park, N. J.

New Bulletin on Projection and Spot Welders

A new bulletin completely describes spot-projection welders which are said to be usable for a wide range of high production fabricating applications. These air operated press type, low impedance, single phase welders are described in a six page folder that also includes machine data to indicate KVA range, throat depths, welding capacities, etc. It also describes optional equipment which extends the range of welder functions. For a copy of Bulletin 317-2R, write to Dept. MPM, Sciaky Bros., Inc., 4915 West 67th St., Chicago, Ill.

Electrostatic Spray Equipment

A six page folder is available that describes electrostatic spray equipment. Power packs, air and paint controls and ionic guns and stands are described. Several different types of finishing systems are described in the folder that covers almost any type of painting operation, according to the manufacturer. For the free folder write Dept. MPM, Ionic Electrostatic Corp., 111 Monroe St. Garfield, N. J.

New Barrel Rack Literature Available

How modern materials handling techniques can be applied to steel drums for the first time, according to the manufacturer, by the use of newly developed portable steel barrel racks is described in literature now available. A four page brochure illustrated in color tells how the barrel racks permit the handling of stacked or empty barrels and drums with standard fork lift trucks. Barrels can be stacked to any practical height with the new units which are designed for two- and four-way fork lift truck entry. Bulletin 961 is available from the Pressed Steel Div., Dept. MPM, Republic Steel Corp., 6100 Truscon Ave., Cleveland 27, O.

Arc Welding Training Manual

A new training manual is available from the American Welding Society that supplies industry and vocational training centers with factual, authoritative information on arc welding, following the practices approved and recommended by the Society. It is available from the Society at 33 West 39th St., New York 18, N. Y.

Three Booklets Describe Stainless Steel in Fabrication, Welding and Design

The key to successful stainless steel fabrication is in practical know-how, according to the manufacturer, in knowing the characteristics of the metal and how they affect various operations. All the information needed on how to fabricate stainless steel for profit — the proper design and use of equipment — is contained in the three books entitled: "Stainless Steel in Product Design", "How to Fabricate Republic Enduro Stainless Steel," and "Welding Republic Enduro Stainless Steel." For the booklets write Dept. MG-5681, Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio.

Thermostat Controls Described

Two types of sensor devices are described in separate bulletins. One is the bellows type that is said to provide accurate control with no drift for cold or heat sensing applications such as oven and refrigerator controls. The "Diastat" assemblies are said to eliminate the need for ambient temperature compensating devices in many applications. These are used in appliances and other controls where a short stroke is desired. The information is designated as follows: Bellows Bulletin K-105 and Diastat Bulletin K-605. Write Dept. MPM, Bridgeport Thermostat Div., Robertshaw-Fulton Controls Co., Milford, Conn.

Useful Data on Aluminum Mill Products

Up-to-date information on mill product availabilities has just been published in booklet form. In addition to giving a complete listing and description of availabilities, the 24-page brochure offers useful data on aluminum characteristics, fabricating and finishing techniques, mechanical and physical properties of alloys, and company services to customers. The booklet may be obtained from Dept. NR-4, Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Ave., Chicago 11, Ill.

Chemical coatings industry holds sales seminars

An MPM press-time report

Thomas N. Armel of The Glidden Co., meeting chairman (L.) with Gen. Joseph F. Battley, President of NPVLA.

THE National Paint, Varnish and Lacquer Association held its annual chemical coatings seminars under the general heading of "SALES" at the Pick-Congress Hotel in Chicago on Thursday, May 15. The general chairman of the meetings was Thomas N. Armel, Regional Director, Chicago, The Glidden Company. After a general session in the morning, the meeting was divided into four individual seminar groups. Each group had an outstanding leader. The four seminar leaders included Thomas H. Coulter who led "The Industrial Sales Manager" session, chief executive officer of the Chicago Association of Commerce and Industry. Mr. Coulter has a background in business as an executive and a management consultant.

Seminar leader on "Industrial Selling," J. R. Oliver, is president and owner of J. R. Oliver Associates, Pittsburgh management and consulting firm.

Leader E. H. van Delden of the seminar on "The Executive and His Sales Organization" is an independent consulting specialist in management, and a director and member, Executive Committee, Mount Vernon Life Insurance Company of New York.

Leader of the seminar on "The Industrial Salesman," William J. E. Crissy is president of Personnel Development, Inc., a consulting firm specializing in sales and executive selection, training and evaluation.

Key sales management men from the leading producers of industrial coatings were present to join with these outstanding seminar leaders to discuss matters of prime importance to the industrial finishing field. Among the headquarters NPVLA staff present were General Joseph F. Battley, president, and executive assistants Jerry Hall and Lou Griffith.

In an opening remark, General Battley said that, "There is no such thing as recession as long as men say openly that sales are down and then whisper, 'but mine are up.'"

Thomas N. Armel requested brief opening remarks before the entire group by the seminar chairmen. Mr. Crissy said that industrial salesmen must be executives as well. They must measure the use of top executive help, technical help and field service assistance. He warned that the salesman must guard against knowing his product and customers so well that he never asks for an order. A good salesman plans his strategy on every call after review of available information. He can't afford to "play it by ear." After his call, he should review his "hits and errors."

The industrial sales manager

In the seminar led by Mr. Coulter, the subject for discussion was the industrial sales manager. According to the summary of this seminar, a sales manager must analyze each of his men on a dollars and cents basis of return for the expense of maintaining the man in his territory. In other words, the salesman either is or is not producing. It was agreed by those in the seminar that one of the most important tasks of the manager is his ability to hire the right man for the job. It was the consensus of opinion that no one good quality, in the interviewing of prospects, such as high intelligence, good personality, etc., is as important as diligent application to selling and mastering the fundamentals of selling.

The industrial salesman

In the seminar led by Mr. Crissy, the industrial salesman was the topic discussed. Each salesman must be brought to realize that selling is a buying *process* and is not, for instance, a mere recitation of the product's merits. Rather, a salesman should try to find out what the customer's needs are, or what the prospect or customer wants to hear about the salesman's products. The salesman should make use of all of the selling tools available to him in the form of company literature, the latest data on new products or, perhaps, a sample of the company's product. It was further brought out in this seminar that the purchasing agent of the company the salesman is calling on often can be converted, in a sense, into a salesman of the company's products right in his own company. Therefore, the purchasing agent can become an effective agent without necessarily realizing it. It was brought out further in this seminar that each salesman must develop a method for sizing up people as separate and distinct personalities who must be dealt with in a different manner than anyone else. A salesman should be encouraged to think through his strategy and tactics for each prospect as a unique individual.

Industrial selling

In the seminar led by Mr. J. R. Oliver, the topic of industrial selling was covered most thoroughly. In summarizing the seminar, one of the points emphasized was that industrial selling must at all times be a positive effort. In other words, retardants such as objections a customer or potential customer may have to a salesman's products must be adequately answered and explained. Another point was a salesman's authority to price a product. Most of those present felt that this was not something for the discretion of the individual salesman. It was also agreed that there are two facets to sales training programs: one, to acquaint the new salesman with the company's line of products in as detailed a manner as possible and, the other, to start each salesman out under the wing of an experienced member of the sales staff.

The executive and his sales organization

In this seminar, one of the conclusions arrived at was that the sales executive must have an organization that enables him to know at all times the progress of each and every salesman. He must never be so far removed from each man as to lose contact with the results and the difficulties of any of the men.

Leaders of the seminars shown with Armel are (from l.) J. R. Oliver, W. J. E. Crissy and E. H. van Delden. Not shown here was T. H. Coulter.

MPM *Photo*

Norge Launches "Buy It Now" Campaign

A "Buy IT Now" local-level dealer promotion offers no down payment for three months on Norge appliances purchased in May and June, and up to 36 months to pay. The exclusive payment protection plan was developed by Borg-Warner Acceptance Corp.

James T. Brown, B-W AC president, said that purchasers will be provided with bonds.

"After three payments, the customer may send bond coupons in place of payment if there is a temporary stoppage of income or temporary financial stress. The purchaser pays $5.00 for the bond, which is redeemable from B-W AC at a premium," Brown said.

In a letter to distributors, Harold P. Bull, Norge vice president of sales, urged that the bond be used extensively in newspaper advertising.

First Quarter Sales, Profit up at Trane

Sales and profit increases for the first quarter were announced recently by The Trane Co., La Crosse, Wis., manufacturing engineers of air conditioning and heating equipment.

Consolidated first quarter sales reached $20,615,456, compared with $18,631,-203 for the same period in 1957.

For the first three months of 1958 profit totaled $1,445,811 as against $1,170,473 for 1957.

First-quarter 1958 earnings came to 68 cents for each of the 2,130,146 shares of common stock, as compared with 59 cents for 1,979,846 shares last year.

NAAMM Consultant Appointed

Fred O. Rippel, president of the Metal Curtain Wall Div. of the National Association of Architectural Metal Manufacturers, announces that Wayne F. Koppes, architectural consultant, has been appointed its technical consultant.

New Room Air Conditioner Section Announced

The formation of a new Section for manufacturers of room air conditioners within the National Electrical Manufacturers' Association was announced recently by Joseph F. Miller, NEMA's managing director.

News of the development followed a meeting called for representatives of room air conditioner manufacturers who are members of the association. J. B. Ogden, general manager, Air Conditioning Div., Whirlpool Corp., was elected temporary chairman.

It was the consensus that the formation of the new Section would be helpful to the industry, and a major step forward in furthering their efforts to improve industry promotions of room and zone air conditioners.

Elmes Joins Ingram-Richardson

William T. Elmes has joined the architectural division of Ingram-Richardson Mfg. Co., Beaver Falls, Pa. He previously was manager of business affairs for the University of Pittsburgh Medical Center. In that position he had management and construction responsibilities involving five schools and eight hospitals.

Tappan 1957 Non-Military Sales Hit Alltime High

Tappan Co. non-military sales for 1957 reached an alltime high while earnings per share increased 30 percent over the previous year, according to Alan P. Tappan, president of the firm.

Earnings per share were reported at $3.51 as compared to $2.68 in the previous year. Dividends totaled $2.00 per share in 1957, compared to $1.40 the previous year, marking the 23rd consecutive year in which Tappan shareholders have received quarterly dividends. Book value of each share increased during the year to $36.29 at the end of the year.

Westinghouse Reports First Quarter Net Income

Westinghouse Electric Corp. sales billed in the first quarter of 1958 were $449,329,000, and net income was $12,-903,000, equal to 73 cents a common share, Chairman of the Board Gwilym A. Price has reported to the directors.

The first quarter billings were 5.5 per cent below the $475,686,000 billed in the first quarter of 1957. However, new business booked in the quarter exceeded sales billed, Price said.

Welding Show an Outstanding Success, Report

The 39th Annual Meeting of the American Welding Society, and the Sixth American Welding Society's Welding Show, held concurrently during the week of April 14, have been adjudged an outstanding success. Attendance overflowed the 10,000 mark, and welding equipment, products, and accessories approximated $2.5 million. The show was held in the Kiel Auditorium, St. Louis, Mo., with the meeting being held at the Statler hotel.

HOGLUND

SANDER

Gustav O. Hoglund, head of the Welding section of the Aluminum Co. of America process development laboratory, was elected president of the American Welding Society, and was presented to the membership at the opening ceremony of the annual meeting held in the Grand Ballroom of the Statler hotel, St. Louis. C. P. Sander, U. S. Steel Corp., outgoing president, opened the meeting of the society.

Westinghouse Announces Line of Wood and Steel Cabinets

The Westinghouse major appliance division has introduced a complete line of both wood and steel kitchen cabinets to its dealers.

Westinghouse thus becomes the first full-line major appliance manufacturer to offer wood cabinets, as well as the first to offer both wood and steel, according to John J. Anderson, manager of the major appliance division. He said the dual approach would give Westinghouse dealers the most complete and flexible sales approach to home modernizing and builder business in the industry.

The new lines will be introduced on a market by market basis throughout this year, the division manager said. A line of steel cabinets by Westinghouse has been distributed in approximately 18 markets by Westinghouse Appliance Sales and this will be expanded and augmented by the wood line, he said.

Florence Stove Co. Changes Name to Geo. D. Roper Corp.

Stockholders of the Florence Stove Co., Kankakee, Ill., voted recently to change the firm's name to Geo. D. Roper Corp. Florence merged with the former Rockford, Ill. gas range manufacturer last October 31.

The change in the firm's name was announced jointly by board chairman Stanley H. Hobson and president John P. Wright. The change was made because a major portion of the company's brand-name gas range production will be marketed under the Roper label.

Production of Florence gas ranges will be continued by the Florence Range Div. of Geo. D. Roper Corp.

U. of Illinois Student Wins Ferro 1st Prize

Robert D. Shannon, graduate student in the University of Illinois Department of Ceramic Engineering, was awarded first prize in the ninth annual contest conducted by the Ferro Corp., Cleveland, Ohio, on papers related to techniques in the porcelain enameling industry. His paper was "A Study of Polymorphic Forms of Titanium Oxide in Porcelain Enamels." He is now a fellow on an Armco Steel Products Fellowship at Illinois, working on an advanced degree.

Eleven Manufacturers Receive GAMA Awards

Eleven leaders of the gas appliance industry were honored by the Gas Appliance Manufacturers Association during its annual meeting held recently at The Greenbrier, White Sulphur Springs, W. Va.

Recipients of the GAMA meritorious service awards were: Chester E. Blome, Metalbestos Div., William Wallace Co.; T. D. Bromley, Dura-Vent Corp.; Keith T. Davis, Carrier Corp.; Julius Klein, Caloric Appliance Corp.; Walter Lee, Major Controls Co.; Norman Millard, Philco Corp.; Frank J. Nunlist, Mueller Climatrol Div., Worthington Corp.; R. B. Robinson, Whirlpool Corp.; Robert I. Warnecke, Roberts-Gordon Appliance Corp.; Harley Weatherly, Chattanooga Royal Co.; and Don Winegardner, The Majestic Co.

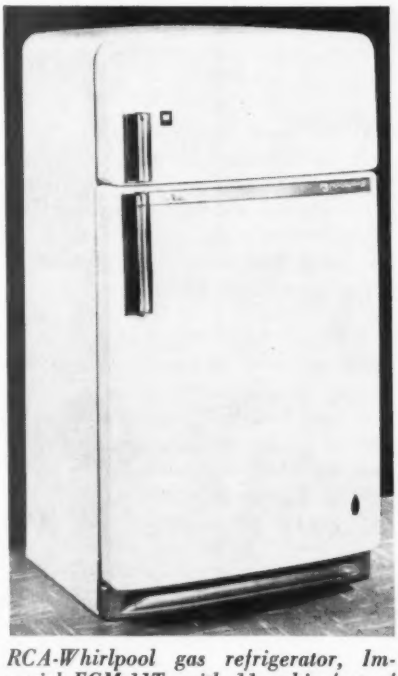
Klein was honored for his leadership of the association as president during the 1956-1957 association year. The others were cited for outstanding service as chairmen of product divisions or of key industry committees.

The 570 manufacturer members of GAMA account for 95 per cent of the nation's output of gas appliance and equipment used in home and in industry.

RCA-Whirlpool Announces Line of Gas Refrigerators

The first line of gas refrigerators to be manufactured and nationally distributed in the U. S. since mid-1957 has just been announced by the Whirlpool Corp. All four of the new RCA-Whirlpool gas refrigerators are said to obtain constant, unvarying cold for ideal food preservation through the magic of a tiny, economical gas flame. With no moving parts nor "on-off" cycling, the refrigerators are said to be completely silent, and interior temperatures remain constant 24 hours a day.

Main feature of the new line is the automatic ice maker, called "Ice Magic," which makes semi-circular disks of ice, deposits them in a handy storage bin, then fills itself with water and freezes a new supply, repeating the process until an automatic control indicates that the ice bin has been filled. Other features of the Imperial EGM-11T, now in production, include porcelain enameled twin crisper drawers and porcelain enameled interior. (See "Spotlight," Page 12, this issue.)



RCA-Whirlpool gas refrigerator, Imperial EGM-11T, with 11 cubic feet of storage space and an automatic ice maker in the separate 70-lb. freezer compartment. Rosewood inlaid door handles carry out the decorative motif of other 1958 RCA-Whirlpool appliances.

NHMA Exhibit to be Biggest Ever, Report

Housewares manufacturers have indicated they intend to sell their way out of the country's current business recession.

This conclusion was drawn in Chicago recently by Dolph Zapfel, secretary of the National Housewares Manufacturers Association, when he announced the greatest assignment of summer exhibit space in housewares history.

The NHMA twenty-ninth National Housewares Exhibit, scheduled to be held July 7-11 in the Atlantic City Auditorium, will have 660 exhibitors, making this the largest summer show in the history of the housewares industry, according to Zapfel.

"The demand for exhibit space was unprecedented," Zapfel said. "It looks as though housewares manufacturers are not going to sit still and listen to recession talk; they want to show their products to the nation's buyers at NHMA's summer gateway to the multi-billion dollar housewares market."

Forty-one manufacturers will show their products on the huge stage of the Atlantic City Auditorium, and balcony level areas never before used for NHMA exhibits have been pressed into service.

Avco, Penn Metal Co. to Offer Porcelain Curtain Wall

A new architectural porcelain curtain wall system developed by the AK Div. of Avco Mfg. Corp. will be marketed jointly with Penn Metal Co., Inc., manufacturers of lightweight steel structural frames, Avco announced.

The system is engineered for office buildings, schools, stores, hospitals, clinics, industrial and commercial buildings, and other one, two and three-story structures. Penn Metal will provide the structural framework and AK will supply modular porcelain-on-steel panels and accessories. It will be marketed under the trade name Penn-Wall.

Whirlpool Dividend

Directors of Whirlpool Corp. recently declared a quarterly cash dividend of 85 cents per share on the 4¼ per cent cumulative convertible preferred stock, and 25 cents per share on the common stock outstanding, it was announced by Elisha Gray II, president.

The dividend on both the cumulative convertible preferred and the common stock is payable June 10, 1958 to stockholders of record at the close of business May 23, 1958.

INDUSTRY PERSONALS

Appointment of **Herbert B. Joyce** as director of purchases has been announced by George A. Lyon, Jr., president of Lyon, Inc., manufacturers of stainless steel wheelcovers for the automobile industry, stainless steel sinks, and flatware for the consumer market. The company is a large user of stainless steel.

The board of directors of Dictaphone Corp. has elected **A. Donald Brice** to the position of vice-president, advertising, it has been announced by C. K. Woodbridge, chairman of the board and chairman of the executive committee.

Howard D. White, co-founder and formerly executive vice president of Revco, was elected president by the board of directors of Revco at its regular meeting. White succeeded **G. F. Forsthoefel** who was elevated to chairman of the board.

Two executive appointments in the Mueller Climatrol Sales organization have been announced by H. P. Mueller, Jr., executive vice president, for the Milwaukee-based company.

Don Davidson, formerly field sales manager for Mueller, has been named manager of marketing, a new post. **Richard B. Schmidt,** formerly sales promotion manager, has been appointed sales manager for all Mueller Climatrol products.

DAVIDSON

SCHMIDT

James A. Kerr has been named public relations manager for Caloric Appliance Corp., according to LeRoy Klein, vice president in charge of sales.

Formerly director of public relations for Federal Pacific Electric Co., Kerr will be responsible for national programming of public relations for the firm's gas appliance and architectural porcelain enamel lines, corporate and community special events, and related activities.

W. J. Bailey, president of the Day & Night Mfg. Co., La Puente, Calif., recently announced the promotion of **Frank R. Spratt** to the position of general sales manager. In his new position, Spratt will be responsible for the sales and national distribution of all Day & Night products including water heating, air conditioning, and heating equipment. *(See "New plant features modern fabrication and porcelain enameling facilities," Page 23, this issue.)*

Replacing Spratt is **Craig C. Stirewalt** as assistant general sales manager, He was formerly California regional sales manager and has served with various engineering and sales positions since he joined Day & Night in 1945.

Ralph Langley will be assigned to replace Stirewalt. He was previously Eastern regional sales manager, and joined Day & Night in 1949.

Jim Buster, formerly sales representative for the Michigan area, will replace Langley as Eastern regional sales manager.

Madge Lewyt, who has been director of the Home Service bureau for the Lewyt Corp., makers of the vacuum cleaner on big wheels, has taken on the additional duties of director of Consumer Research, according to Henry Dorff, vice president.

C. E. Parson, former advertising manager for Chambers Built-Ins, Inc., Chicago, has rejoined the firm as director of advertising and sales promotion.

Parson, who was with the firm for six years, had more recently been in charge of advertising for Avco's American Kitchens.

Promotion of **Arthur M. Moody,** 45, to chief product development engineer, and **Arne Frank,** 32, to senior development engineer, reciprocating compressors, has been announced by The Trane Co., La Crosse, Wis., air conditioning and heating equipment manufacturer.

Alan F. Kelsey has joined Marchant Calculators, Inc., Oakland, Calif., as director of manufacturing, it was announced recently by Walter Kassebohm, executive vice president and general manager of the business machines manufacturing concern. Kassebohm also announced the appointment of **John E. Wilson** as plant manager of the company's Oakland factory.

Wayne A. Deringer, Milwaukee, Wis., associate director of the A. O. Smith Corporation's research and development division, was installed as president of the National Institute of Ceramic Engineers at a meeting of the Institute in Pittsburgh April 27.

The meeting was held in conjunction with the annual convention of the American Ceramics Society, of which the Institute is an affiliate. Deringer is a Fellow of the Ceramics Society and, until becoming president of the Institute, was one of its vice presidents.

KELSEY

DERINGER

Matthew M. Lawler, vice president and general manager of the Air Conditioning and Refrigeration Div. of Worthington Corp., has announced a reorganization of the division's sales department.

Andrew F. Ward has been appointed manager of distribution, and will be responsible for the sale of all the division's products sold through franchised distribution.

Earl R. Michel has been appointed manager of direct sales, and will be responsible for direct sales of all the division's product sections as well as the administrative sections.

Peter A. McLeod has been promoted to the newly-created position of manager of product sales.

John C. Conrad, formerly technical sales representative of the Cleveland area, has replaced McLeod as product sales manager for centrifugal refrigeration products.

Charles V. Bengle has been appointed manager of the applied systems section, and has responsibility for induction and fan coil systems for multi-story buildings.

Appointment of **James R. Garner** as chief manufacturing engineer of Waste King Corporation's technical products division, Los Angeles, was announced recently by Howard C. Given, executive vice president of the corporation.

Given said Garner will supervise liaison between the division's design and production departments, estimating, tooling, and production planning.

Whirlpool cuts appliance maintenance with self-locking set screws

locking device has wide application in places where vibration is factor

SPECIAL SELF-LOCKING set screws, called NYLOK, are now used by the Whirlpool Corp. to fasten motor, brake, and transmission pulleys on RCA-Whirlpool automatic clothes washers and dryers.

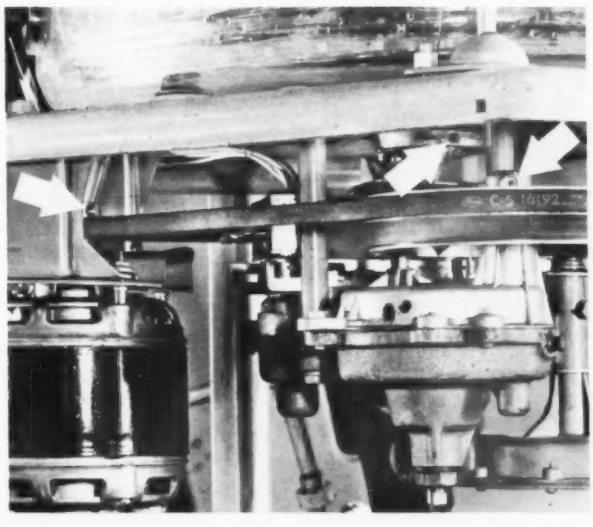
The special set screws have a small plug of nylon embedded in the threaded area of the fastener to hold the screw from slipping out of adjustment even under heavy vibration and impact.

Whirlpool decided on using NYLOK after a test which simulated ten years of washer life. After running a total of 1,752 hours, it was found that the set screws held firm. Two of the machines used in the test had the screws removed every 500 hours and reinstalled, simulating a repair job and proving the reusability of the special screws.

The patented principle of locking can be applied to any threaded fastener, male or female, standard or special, and has already found wide application in the automotive, aircraft, and other industries.

For further information, contact Special Projects Editor, METAL PRODUCTS MANUFACTURING.

Arrows show position of self-locking set screws which employ use of small plug of nylon in threaded area to prevent screw from slipping out of adjustment under vibration. This principle of locking may be used in any type of threaded fastener, male or female, standard or special.



RESPONSE TO "WHERE DOES SERVICE START"

→ *from Page 31*

of a product grows constantly more intense — probably for every manufacturer. In today's condition of mounting costs and vanishing profits, it is highly essential that we save every one-half cent — or even one-eighth cent — that we can. Any such cost reduction, however, must be an actual savings, and not an invitation to higher costs in the terms of service and claims.

As much as I can agree wholeheartedly with you on the unfortunate situation of major service problems on many products in the field of consumer durable goods, I do think that our plumbing and heating industry is ahead in the march toward sounder products and more satisfactory service for the consumer.

Sincerely,

Veard J. Heinis • **VICE PRESIDENT**
Home Products Division
Rheem Manufacturing Company

We have our own private opinions of the plumbers we have had occasion to deal with and "the more satisfactory service" they offer, but this would not seem to be the time or place to debate the question of service by this important channel of distribution. It is our hope that plumbing contractors, in general, are living up to the high standards described by Mr. Heinis. Editor

ROGAN

will introduce a complete line of

NEW KNOBS

Created specially for appliances, ranges, washers, dryers, etc.

•

Beautiful, functional styling
Wide Selection of Sizes, Colors

•

VISIT BOOTH 74

Institute of Appliance Manufacturers Convention
June 1-4, Cincinnati, Ohio

•

ROGAN BROTHERS
8013 N. Monticello, Skokie, Illinois

Presstime News

MPM Appoints Eastern Manager

Metal Products Manufacturing is pleased to announce the appointment of Thomas F. Langan as Eastern Manager — Customer Service. Mr. Langan has over twelve years experience in the publishing field. Prior to joining MPM he was associated with Automotive Digest and MacRae's Blue Book. The MPM Eastern office is located at 15 W. 44th St., New York City. The telephone is Murray Hill 7-7040.

Louis Putze, president of Controls Co. of America, was elected a director of the national Young Presidents' Organization at the annual meeting recently in Honolulu, T. H. A founder and past chairman of the Chicago Chapter, Putze was named to a three-year term.

Frigidaire to Market No-frost Refrigerator

Harlow H. Curtice, president of General Motors, has announced a refrigerator-freezer that never needs defrosting. It is said that the new unit never develops any frost, not even in the freezer section.

The new model is in production at the Dayton plant, and is a two-door, 14.2-cubic foot unit with a separate 133-pound freezer section.

Appointment of a new vice president, general sales manager, and assistant to the vice president has been announced by Turco Products, Inc., manufacturer of chemical processing compounds. Elected as vice president-marketing is **Dan T. Buist,** for the past 7 years Turco's director of sales. Appointed general sales manager is **Archie K. Beard** who has held various supervisory sales positions with Turco over the past 10 years. Named as assistant to vice-president-marketing is **Stewart B. Van Dyne,** for 7 years administrative assistant to Turco's director of sales.

Wilbur T. Blair, vice president and treasurer of the Sharon Steel Corp., recently announced the promotion of **Raymond H. Jones** to director of profit control and computer programs, and **S. M. Cebulko** to general auditor.

Guy T. Avery, president, Acme Steel Co., has announced the election of **Hubert L. Bills** as executive vice president for organizational planning.

Gray Elected Whirlpool Board Chairman

The board of directors of Whirlpool Corp., manufacturer of major home appliances, recently elevated Elisha Gray II, president of that corporation, to the position of chairman of the board. In this position, Gray continues as chief executive officer of the company. Robert E. Brooker, vice president of Sears, Roebuck and Co., was elected president of the company. Charles H. Kellstadt, president, Sears, Roebuck and Co., and Robert C. Upton, vice president, Whirlpool Corp., were elected directors, enlarging the Whirlpool board of directors from nine to eleven.

United Steel Products Changes Name

A leading independent producer of basic aluminum coil and precoated aluminum strip announces that its corporate name, United Steel Products Corp., has been changed to United Pacific Aluminum Corp. The change was made to more closely identify this company with its products.

The election of **Charles W. Betz** to vice president, sales, Alliance Ware, Inc., has been announced by Paul M. Corp, president. Betz had been director of sales for the firm since May, 1957, coming to the company at that time from American Metal Products Co., the parent corp., where he was director of commercial research.

Major Electric Appliance Dealers to Meet June 2

Sales and administrative executives of the nation's appliance industry will meet at Ponte Vedra, Fla., for the start of a three-day convention called by the Major Appliance Div. of the National Electrical Manufacturers' Association.

Report Good Quarter at Vitro

J. Carlton Ward, Jr., president of Vitro Corp. of America, New York, reported to the shareholders at the annual meeting recently that revenues for the first quarter of 1958 were higher than for the first quarter of 1957, and were the best of any previous first quarter. Net income, however, was lower, reflecting principally start-up losses incurred by Vitro Rare Metals Co., a division.

After an absence of nearly four years, Mrs. **Boone Strickland Clarke** returns to Pemco Corp., Baltimore, Md., as advertising manager, the position she held prior to going to Hutzler's, one of Baltimore's largest department stores.

A basic handbook on aluminum chemicals

A basic handbook on industrial applications of aluminum chemicals has been published and is referred to as "the most comprehensive technical publication in its field."

The 48-page color-illustrated book summarizes the technology of present applications, and suggests new uses for a wide variety of chemicals produced by the aluminum industry. In addition to including information on aluminum chemicals, major uses, products, and quality control facilities, the publication includes tables and charts on useful technical data.

Copies of the handbook, "Aluminum Chemicals," are available to chemists, chemical engineers, purchasing agents, and management personnel upon letterhead request to Readers Service Dept., METAL PRODUCTS MANUFACTURING, York St. at Park Ave., Elmhurst, Ill.

COMING FEATURES

DESIGN

CIRCUIT BREAKERS — TYPES AND USES IN THE APPLIANCE INDUSTRY

FABRICATION

AUTOMATIC WELD-ROLL PLANISHING MACHINES SPEED CONTAINER PRODUCTION

SLITTING AND SHEARING LINE AT WESTINGHOUSE

FINISHING

ORGANIC FINISHING AT MAYSTEEL PRODUCTS, INC.

REPRODUCIBILITY OF ALKALI RESISTANCE TESTING

GENERAL

INFRARED FOR INDUSTRIAL HEATING

USE OF ULTRASONICS IN THE METAL PRODUCTS FIELD

NEWS about Suppliers

DeVilbiss Opens New Eastern Sales Branch

Another step in the nationwide program for relocating and expanding direct factory branches of The DeVilbiss Co. was completed recently when the northeastern headquarters was moved from Newark to a new building in Springfield, N. J.

The new branch, with more than 11,000 square feet of floor space, includes a testing and demonstration area, repair, rebuilding and exchange center, and sales, engineering, and administrative offices for DeVilbiss and its newly-acquired subsidiary, Newcomb-Detroit Co., (now called Newcomb-DeVilbiss Co.) designers, manufacturers, and installers of custom-built industrial finishing equipment.

Armco Steel, National Supply Merge

The merger of Armco Steel Corp., large U.S. steel producer, and the National Supply Co., large manufacturer of oil field equipment, was approved recently by Armco stockholders at their annual meeting in Middletown, Ohio.

National Supply stockholders voted their sanction of the merger at their annual meeting held recently in Pittsburgh.

New Metal Treatment for Appliance Builders

Savings running into thousands of dollars each year are now available to appliance manufacturers treating large sheet metal areas, with a new "cold Bonderite system" of pre-paint metal treatment, according to R. W. Englehart, president, Parker Rust Proof Co., Detroit, Mich.

"One large sheet metal processor has already claimed a 70 per cent savings in over-all heat costs, fuel savings at 40 carloads of coal per year, and one less steam boiler in operation," states Englehart.

Additional benefits claimed for the "cold Bonderite system" are reduced maintenance, shorter heat-up time, reduced down time, and increased worker comfort around the installation. Maintenance crews can enter the unit immediately after shutdown to make adjustments or repairs.

Reynolds Metals Producing Super-High Purity Aluminum

Super-high purity aluminum now is being produced commercially by Reynolds Metals Co. The firm announced that its Listerhill, Ala., plant is making ingots of 99.99 per cent purity. Reynolds has been in commercial production of ingots of various sizes since last Fall, but has settled on a seven-pound ingot as its standard commercial size.

The high purity aluminum is used in catalysts for high-octane petroleum refining, and for jewelry and other wrought products requiring a special finish.

Anaconda Acquires Cochran Foil

Anaconda Co. has announced the consummation of its acquisition of the assets and property of Cochran Foil Co., manufacturers of aluminum sheet, foil and laminated foil products, at a meeting held in Louisville, Ky.

Under the completed agreement, all the assets and properties of Cochran Foil Co. have been transferred to Cochran Foil Corp., a newly-organized and wholly-owned subsidiary of Anaconda.

Business Decline is Leveling Out, Report

J. L. Mauthe, chairman, The Youngstown Sheet and Tube Co., recently told shareholders at their annual meeting: "There does seem to be some evidence of a leveling out of the business decline, and it is hoped that this presages a subsequent upturn."

Mauthe's annual report to the shareholders coincided with the announcement of the results of the company's first quarter operations. These operations declined substantially from those of the first quarter of 1957.

Sharon Steel Announces Scholarship Plan

Sharon Steel Corp. has announced its 1958 Scholarship Plan for sons and daughters of employees of the company who will graduate from high school this year.

Up to six scholarship awards are available this year in courses of Engineering, Chemistry and Physics at Youngstown University, Youngstown, Ohio, or Westminster College, New Wilmington, Pa. Awards up to $675 per academic year are granted for four-year courses of study, to cover cost of tuition, books, fees, and supplies. Winners of awards are selected on the basis of academic records, personality, character, and extra-curricular activities.

Federal Pacific Graduates First Class of Specialists

Graduation of its first "class" of industrial product specialists has been announced by Federal Pacific Electric Co.

Part of the company's program to train engineers specifically to service the original equipment market, the course was given to a specially-selected group of Federal Pacific personnel. They will be assigned to various company offices throughout the United States, backing up the efforts of regular Federal Pacific sales and field engineers now working with original equipment manufacturers.

The concentrated training program, held at Newark under the direction of the company's industrial products department, consisted of three months of intensive classroom, factory, and field orientation. Among subjects covered were electrical theory, power and control circuits, motors, motor controls, general machinery trouble shooting, and industry sales problems.

The engineer-experts who completed the company's three-month schooling, designed to train them to service the original equipment market, are (left to right), instructor J. R. La Rocque, Federal Pacific product manager for motor controls; J. J. Dalton, H. D. Prager, W. H. Hazzard, C. A. Schmidt, manager of Federal Pacific's industrial products department and the school's "Dean;" F. C. Nichols, R. E. Sigmund, O. R. Shirey, and instructor L. Groshardt, Federal's product manager AB *breakers.*

Harrington & King Perforating Co. Celebrates Diamond Anniversary

On last May 4th, Harrington & King Perforating Co., Inc. celebrated its 75th anniversary. The company has its manufacturing facilities at 5655 W. Fillmore St., Chicago, and a sales office at 114 Liberty St. in New York City.

Pemco Appoints Induco S. A. as Mexican Representative

The Pemco Corp., Baltimore, Md., manufacturers of a complete line of porcelain enamel frits, glazes, oxides, and glass colors, has announced the appointment of a new company, Induco S. A., as representatives for all Pemco products in Mexico.

With offices located at 13 San Juan de Letran Street, Mexico City, Induco S. A. also has selling agents in Monterrey and other principle industrial cities.

The manager of the Mexican company, Juan de Dios Canedo, says the immediate market will be developed across the complete range of Pemco products. Induco S. A. will also handle Metal and Thermit opacifiers, and plans are now being completed to stock Pemco materials in Mexico City.

Cerro Reports 1957 Operating Results

Cerro de Pasco Corp., of which Fairmont Aluminum Co. is a subsidiary, reported consolidated net income for 1957 amounted before depletion to $5,694,453, equivalent to $2.76 per share on the 2,049,794 common shares outstanding at the year end. This compares with 1956 consolidated earnings before depletion of $13,429,411, or $6.51 per share based on the identical number of outstanding shares.

Armco Scholarship Awarded to Cuban

The 1958 Armco International Corp. scholarship for foreign students has been awarded to Guillermo de la Vega, Jr., Havana, Cuba.

The announcement was made by A. R. Edwards, president of Armco International, a subsidiary of Armco Steel Corp.

De la Vega, 17, is a top ranking student at La Luz High School, Havana, and will graduate this month. He lives with his family at Concepcion 371, Havana, Lawton, and his father is a salesman in Armco International's Havana office.

Steel Executive Calls for Help

Three groups, industrial management, consumers, and organized labor, will have to pull together if a permanent cure is to be found for the business slump, according to A. S. Glossbrenner, president, The Youngstown Sheet and Tube Co.

In an address to the spring meeting of the board of directors of the Indiana State Chamber of Commerce in French Lick, Ind., recently, Glossbrenner rejected the concept that the federal government can pull the economy out of the present business decline all by itself.

He said: "Leaders of business and industry in the nation must first of all recognize and accept the idea that the government can't do the job all by itself even if it undertakes a major program to end the recession."

Robertshaw-Fulton Announces Change

Robertshaw-Fulton Controls Co. has announced the transfer of the heating controls section of its Acro Div., Columbus, Ohio, to its Grayson Controls Div., Long Beach, Calif.

Former Acro Div. products included fan and limit controls, thermostats, and gas valves. These are now manufactured at the Grayson Controls Div.

Robertshaw-Fulton's precision snap-acting switch line will continue to be produced at the Acro Div.

Lindsay Chemical, American Potash Merge

Approval of the merger of Lindsay Chemical Co. into American Potash & Chemical Corp. was voted April 29 by shareholders of both companies at meetings held respectively in West Chicago and New York.

The merger is expected to become effective upon the filing of necessary documents with the states in which the companies are incorporated. Lindsay Chemical will be operated as the Lindsay Chemical Div. of American Potash.

Safety Record Set

Gary Sheet and Tin Mill, Gary, Ind., has established the best safety record ever set by a United States Steel plant, it was announced recently by Robert A. McClure, mill general superintendent.

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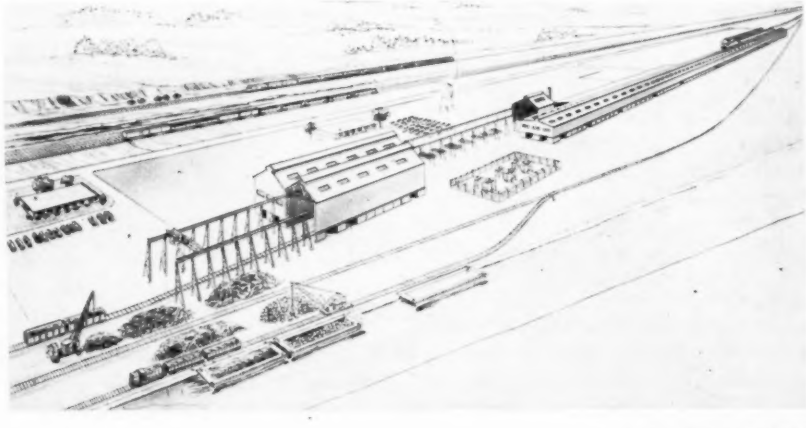
Ceco Steel to Erect $11,000,000 Steel Mill

Ceco Steel Products Corp., Chicago, will erect an $11,000,000 bar steel mill at Lemont, Ill., (Chicago suburb), Ned A. Ochiltree, president, announced recently.

Ceco, a large supplier of structural and related steel products for the construction industry, will produce steel in the new plant under the name of Lemont Mfg. Corp., a new wholly-owned subsidiary. Ochiltree stressed that the entire output of the bar mill, which will have a capacity of 120,000 net tons of billet-sized ingots per year, will be used by Ceco, and not sold to other fabricators.



Supplier Personals

→ *from Page 62*

been a director of the steel company since 1949. Brown was not nominated for re-election because of a board policy of voluntary retirement for directors at 72.

The appointment of **John A. Backstrom** as general manager was announced by the Palmer Tool and Forging Co., Meadville, Pa. He was formerly works manager of The Enterprise Co., subsidiary of Wm. K. Stamets Co., Columbiana, Ohio, and has had many years experience building machine tools and special machinery.

Election of **John E. Potter** as vice president and treasurer of Tinnerman Products, Inc. was announced recently by A. H. Tinnerman, board chairman.

Tinnerman also announced that **Chester A. Jones** has been elected secretary of the fastener manufacturing firm, and that **Robert J. Holton** has been appointed executive assistant.

The appointment of **Ray Ramon** as sales manager of Industrial Products was announced by Robert Kelley, vice president of sales for Tuttle & Kift, Inc., a Chicago manufacturer of electric heating elements, switches, and controls.

William J. McCune was appointed vice president-commercial of Sharon Steel Corp., it was announced by James A. Roemer, chairman of the board. Formerly general manager of sales, he will continue his present duties under the new title.

Ralph L. Allen has been named to the newly-created post of division comptroller for Minneapolis-Honeywell's temperature controls operations in Minneapolis. He will be in charge of order, cost, and office service operations, and will report to J. S. Locke, manager of operations for Minneapolis.

Peter O. M. Erickson has been elected vice president and general manager of McKinney-Skillcraft, Limited, St. Catharines, P. O., Canada, according to an announcement by John Gibson III, president of the firm and McKinney Manufacturing Company, Pittsburgh. McKinney-Skillcraft manufactures a line of hardware, including hardware for kitchen cabinets.

BACKSTROM

POTTER

RAMON

MC CUNE

ALLEN

ERICKSON

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Why die castings were selected for the "Dyna-Touch" escutcheon assembly

by J. W. Daniels • CHIEF MECHANICAL ENGINEER, CONSUMER PRODUCTS DIV., HOFFMAN ELECTRONICS CORP.

MPM FEATURE

IN DESIGNING the "Dyna-Touch" automatic tuning device for our current line of TV receivers, we were confronted with an interesting decision regarding the choice of material, and method of fabrication, for the escutcheon assembly located at the top of the control panel. This assembly is functional, as well as structural and decorative, and a number of physical and economic considerations were involved.

Choice goes to zinc

The ultimate choice for the three metal components comprising the escutcheon assembly was zinc die castings, but both stampings and molded plastic parts were considered and eliminated before the final decision was made. The three zinc die castings are now produced by a custom (job-shop) die casting company. While both stampings and plastic parts offered some advantages, (these materials are employed for other components of the control panels), in the case of the escutcheon assembly they were rejected for the following reasons:

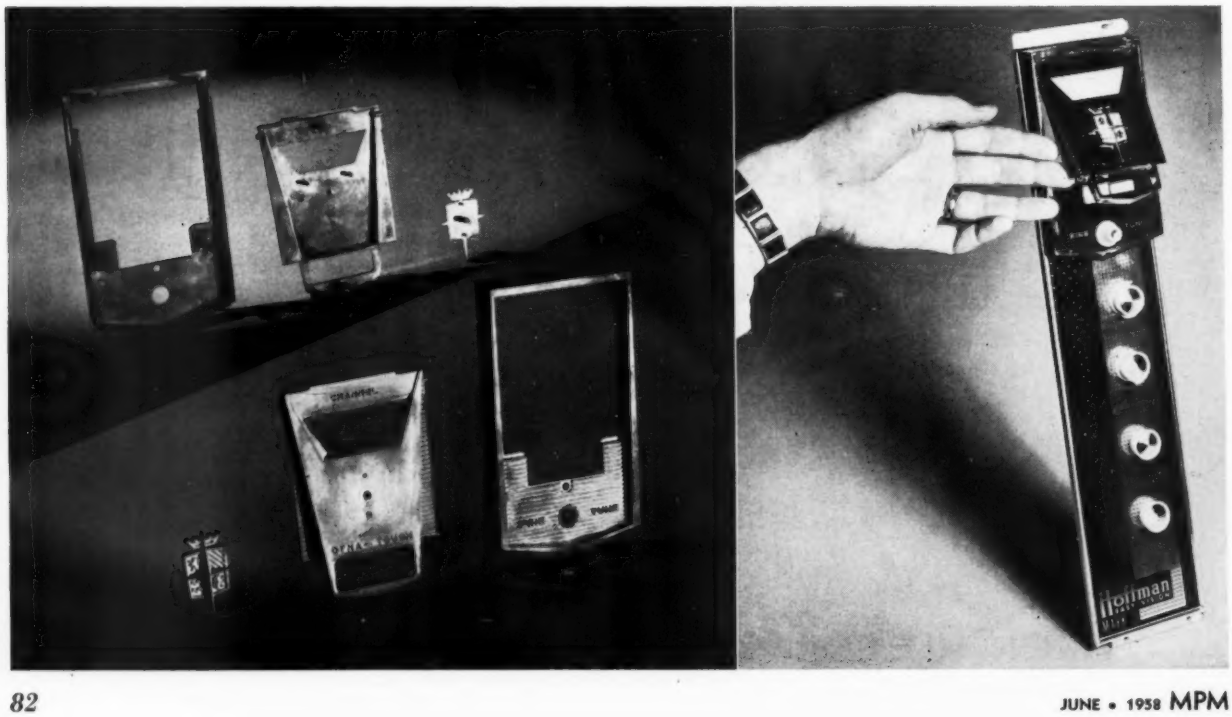
1. Die-formed sheet metal parts were eliminated in the early stages of the design because the intricate fine detail desired in the styling plus the additional requirements for mounting pins, hinges, etc., would have made the tooling costs prohibitive for the quantity we contemplated producing.
2. Injection-molded clear plastic parts were also considered for this application, using a vacuum plating process on either the rear or front face of the molded parts for the decorative finish. Plastic parts were eliminated, in this instance, due to the lack of structural strength, and also because it was decided that the plastic parts would not give the quality jewelry feel and appearance that was desired for this item.

Design an important factor

Once the decision was made to employ zinc die castings, detail drawings were made, and the basic design was discussed with several die casting producers to arrive at shapes which could readily be die cast, and which would lend themselves to subsequent polishing, plating, and painting operations. A replica of the escutcheon assembly was then machined, fabricated, and finished exactly as the final components were to be produced.

Final production details were resolved in a meeting involving engineering and tool room representatives from the die casting company's staff, our product stylist, Joe Portanova, our

The three zinc die cast escutcheon components are shown as received from the custom die casting supplier. Note smooth surfaces, clean-cut detail, sharp engraving, cored openings, and cast projections which greatly facilitate assembly. Close-up of control panel shows unusual plated and painted finishing treatment of the escutcheon assembly which blends beautifully with the entire panel.

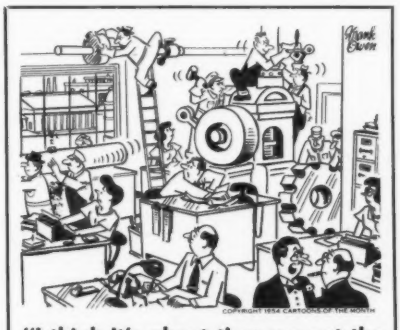


mechanical engineer, Mr. Messner, (my co-inventor on the "Dyna-Touch" tuning system), and myself. Minor design changes were made as a result of this meeting to facilitate tooling and the final drawings were then released for tooling and production samples. The tooling, including receipt of finished production samples with plating and painting, was completed approximately ten weeks after the final drawings were released.

Conventional methods produce extraordinary appearance

While conventional electroplating and painting procedures are followed in finishing the three zinc die castings in the escutcheon assembly, the combination of finishes is most unusual, and results in a striking rich-looking appearance which blends into the complete control panel. The stationary frame casting is gold plated, all but the serrated flat surface is then masked off, and a rich black enamel is applied. The resulting effect is a pleasing contrast between the gold plated outer flange and raised lettering of the words "Fine Tune" and the black background. A similar procedure is followed with the movable cover casting except that, in this instance, the plating is chrome and the lettering "Channel" and "Dyna-Touch" is subsequently painted black. The Hoffman emblem casting is gold plated to contrast with the chromium plated surface of the cover casting on which it is mounted by means of a speed fastener.

The successful use of die castings is the result of taking full advantage of the advice of die casting suppliers throughout the design stages. This policy ultimately leads to the specification of shapes and tolerances which will meet appearance and functional requirements, and still be within the range of economical die casting procedures.



"I think it's about time we got the plant and office managers together and held a conference!"

New process offers high density coatings of molybdenum

based primarily on electrophoretic deposition which has been under development for many years, the electrophoretic technique is being refined for the development of a wide variety of coatings

THE technique of electrophoretic deposition from non-aqueous media is said to have a number of distinct features which rank it in a class apart from other coating techniques such as electroplating or electrodeposition from aqueous media. Among these are:

The use of high plating voltages — without gas evolution at the electrodes — which results in uniform, adherent coatings of high density.

The high throwing power of the dispersion which allows exceptional uniformity and the reproduction of thickness even on irregular shapes. Thickness variations can be controlled to ± 0.1 mil. Current densities range from 0.05 to 0.30 amps/sq. ft., and yield deposits up to 10 g/ coulomb.

Rapid deposition, since a large amount of material is deposited in an extremely small passage of current.

Coatings of 2- to 4-mils thick can be applied in 20 to 40 seconds.

Preparation of the dispersion

The first step in the coating process is the preparation of a dispersion of finely-divided metallic particles in a non-aqueous solvent such as isopropanol. Depending upon the particle sizes and size distribution required for the final application intended, ball milling, high speed stirring, roll milling, or similar methods may be used to reduce the metallic particles to the desired range. Selected additives are used to increase the activity of the dispersion, and to improve its stability and shelf life.

Coating

The article to be coated is made one of the electrodes and is suspended in a bath containing the dispersion. The deposition process is normally rapid and can be controlled by electrode spacing, voltage, dispersion concentration, and additives. The resultant electrophoretic deposits are not in themselves structural elements since the particles must be sintered together and bonded to the substrate to yield a coherent coating. If the coating contains the oxide, a reduction step must follow to produce a pure molybdenum coating.

Densification

A densification treatment is necessary to achieve optimum peaking of the discrete metallic particles into an impermeable coating. Proper particle size distribution aids in obtaining maximum density. Although many mechanical working techniques are applicable, hydrostatic pressing at 25-50 tsi has been found most efficient.

Sintering

The sintering step transforms the closely-packed, finely-divided metallic particles into a homogeneous coating. It is carried out in a reducing atmosphere at a relatively-low temperature (about 1200°C), compared with the melting point of molybdenum. The final step results in a bright, dense, well-bonded coating with a well-defined diffusion layer.

Other applications

In addition to the preparation of molybdenum coatings, the electrophoretic deposition technique also offers a new approach to the development of a wide variety of composite materials based on metals, alloys, cermets, and ceramics. Some of the areas which have shown the greatest promise include lubricating coatings such as lead monoxide in silver and boron nitride in nickel, erosion- and corrosion- resistant coatings such as tungsten carbide bonded in nickel, ceramic glaze coatings, and special ceramic coatings such as barium titanate bonded to a metal substrate.

For further information, write Special Projects Editor, METAL PRODUCTS MANUFACTURING, York St. and Park Ave., Elmhurst, Ill.

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editorial voice of the national safe transit program

devoted to improving packaging methods and shipping and materials handling methods for the appliance and metal products manufacturing industries. This section contains plant experience information and industry advances for the use of all executives and plant men interested in improving packaging and shipping methods and in loss prevention. The section contains complete information on the national safe transit pre-shipment testing program for packaged finished products and detailed reports of divisions and sub-committees of the National Safe Transit Committee.

Wilkinson Appointed Assistant Secretary of NST

William M. Wilkinson has been appointed to the position of assistant secretary of the National Safe Transit Committee, according to an announcement by John C. Oliver, secretary of the committee, and managing director of the Porcelain Enamel Institute, Inc., NSTC's sponsoring organization.

In Wilkinson's new position, he will assist in general administration of the National Safe Transit Program, and will give special attention to the field of public relations with manufacturers, laboratories, and carriers, said Oliver.

A native of Indiana, Wilkinson was educated at Long Beach City College, Calif., and the University of Maryland. He joined the National Safe Transit Committee staff late in 1957 and has since been acting as coordinator of the Washington office's administrative affairs and aiding in its overall public relations activities. These will continue to be his responsibilities in addition to his increased public relations activities with industry in the field.

Traffic World Article Lauds NST

John M. Miller, executive secretary of the National Freight Claim Council of the American Trucking Associations, Inc., in a specially-prepared statement on freight loss and damage claim payments in the trucking industry for 1957, which appeared in Traffic World's "Perfect Shipping Annual for 1958," stated that "prevention is a means of survival."

"In future months, an effective freight loss and damage prevention program might provide the progressive motor carrier with 'the means of survival'," he said.

Miller also said that "The rise in concealed loss and damage claims in recent years certainly indicates that many shippers have cheapened their packaging and have passed the cost on to the carriers."

In closing, Miller made this statement, "The growth of the National Safe Transit Committee's program, designed to encourage shippers to subject their packaged shipments to prescribed preshipment tests, would undoubtedly afford mutual benefits to all who were involved in transportation."

Packaging Association of Canada Elects Officers

At the recent annual meeting of the Packaging Association of Canada, held in conjunction with the Canadian National Packaging Conference, the following officers and directors were elected: President, C. W. Stephens, vice president & general manager, Dominion Paper Box Co., Ltd. First vice president, S. C. Torno, vice president, Danforth Wines Ltd. Second vice president, G. G. Rolph, director of lithographic div., Rolph-Clark-Stone Ltd. Hon. treasurer, T. M. Dutton, vice-president, Wonder Bakeries Ltd. Secretary and general manager, L. G. Jamison, Packaging Association of Canada. Immediate past president, T. M. Dutton, vice president, Wonder Bakeries Ltd. Directors, J. S. Feggans, director of advertising & public relations, Dominion Stores Ltd. R. E. Mander, sales manager, TCF of Canada Ltd. R. B. Sammon, vice president, Stein-Hall Ltd.

Chicago Coliseum Site of 1958 Packaging Show

"The Show How—Know How—Pro How Show" is the slogan for the 1958 National Industrial Packaging, Handling and Shipping show, competition and technical short course that will be presented at the Coliseum, Chicago, Oct. 13-16, by the Society of Industrial Packaging and Materials Handling Engineers.

Announcement of the slogan was made by Paul Schreck, Moto-Truc Co., Cleveland, Ohio, general chairman of the "triple feature" event. He explained: "The SIPMHE 'triple feature' event is tops in 'Show How' because it is the only show specifically directed to the protective packaging, materials handling, and shipping market. It is tops in 'Know How' because of its famous technical short course program, which will be under the direction and auspices of the University of Illinois College of Mechanical Engineering, Extension Div. It is tops in 'Pro How' through the national competition that gives professional engineers in the field their only chance to compete for national honors and recognition."

Pay-as-you-go Pallets

Tri-State Engineering Co., Washington, Pa., has introduced a new plan for leasing heavy-duty materials handling equipment on a pay-as-you-go basis. The plan gives materials handlers an opportunity to modernize production, shipping, and storage facilities without investing large amounts of capital for outright purchase.

Under an agreement with Boothe

Leasing Corp., San Francisco, Tri-State "Cargotainers" and pallets can be rented for three or five-year periods with an option to buy at the end of the rental period. Boothe will serve as lessor for all equipment.

Those wishing to take advantage of the new leasing plan can do so merely by sending a purchase order or letter of intent to Boothe Leasing Corp., c/o Tri-State Engineering Co., Washington, Pa.

G. E. Presents Inland Container with "Outstanding Supplier" Award

The General Electric Company's Home Laundry Department located at Appliance Park, Louisville, Kentucky, has selected Inland Container Corporation to receive its "Outstanding Supplier" award for Inland's contribution in the field of cost reduction and value analysis.

At a ceremony held recently at Appliance Park attended by officials of the General Electric Company and Inland Container Corporation, Fred H. Holt, manager of General Electric's home laundry appliance operations, presented a plaque, in recognition of Inland's packaging achievements, to W. B. Lincoln, Jr., vice president in charge of Inland's Technical Service Division.

The Inland citation was a result of the development of a radically different approach to the problem of packaging automatic dryers. The new container design reduced packaging material costs and assembly time, and also improved General Electric's materials handling and warehousing costs on this item through better utilization of the physical properties of the corrugated material.

In accepting the award, Lincoln stated that it is Inland's constant objective to provide containers that assure safe delivery of all kinds of products. Inland also helps customers reduce their costs by applying sound engineering principles to specific problems of packaging methods and techniques.

Inland has won wide recognition for its leadership in the corrugated container industry. Many of Inland's developments in materials and construction have become standards within the industry.

Inland Container Corporation was founded in Indianapolis, Indiana in 1925 by Herman C. Krannert who is now chairman of the board. The company serves America's leading industries through the 16 converting plants it has established in industrial centers throughout the midwest and south. Inland also maintains large mill and timberland interests in the south to assure a dependable soure of quality material for its customers' boxes.

(Left to Right) Fred H. Holt, manager, General Electric home laundry department; Harold A. Martyn, division sales manager, Inland Container Corporation; and W. B. Lincoln, Jr., vice president, technical service, Inland Container Corporation.

Imprinted label OK'd by NST

THE National Safe Transit Committee announces the availability of a new imprinted label to its now more than 285 certified manufacturers. Entering the National Safe Transit picture as a supplement to the widely-recognized red and yellow label, the new imprint lends additional emphasis to the nationwide effort to reduce intransit damage through better handling.

It was excessive damage loss to goods in transit which caused the National Safe Transit Committee to be formed nearly ten years ago, as an agency to combat this industry-wide evil. Shortly after the program's launching, there arose a demand for a mark of identification for the pre-shipment tested products. NST brought into being at that time the now familiar red and yellow Safe Transit label.

During recent years, NST has received numerous requests for an imprinted label which would fit the requirements of automation as applied to assembly-line operation. Recognizing the justification for such a demand, NST set about developing a program which would meet this stated need.

First of all there was a label to be designed. The desire was to retain all of the meaningful identity of the nationally-recognized red and yellow label, while incorporating additional symbolism. Every effort was made to tell a story independent of words or color. In effect, to create a mark which would command recognition by its very symbolism — its ability to convey the desired message; "Safe handling is your job, and our job — here is a packaged product tested inside and outside — a story of sound product design and package design — a mark of integrity — handle with care."

In addition, there was the very real responsibility of working out a method of controlling the imprint, to prevent its unauthorized and indiscriminate use. This was a responsibility not only to NST itself, but also to the certified manufacturers and laboratories who were a part of the program.

Trial conducted at Fedders-Quigan

Finally, there was the matter of getting an interested company, preferably one already using the label, to trial-run the imprinting program. Fedders-Quigan, one of NST's longtime participants, a firm believer in the label and one of those who had earlier requested an imprinted label, indicated a willingness to

assist in launching the program. Key figures in setting up the Fedders-Quigan cooperation were Melvin E. Melloch, Fedders-Quigan packaging engineer, and John C. Oliver, secretary of the National Safe Transit Committee. Through determined effort and imaginative insight, the initial problems of control and implementation were worked out. Finally, on December 21, 1957, a signed contractual agreement between Fedders-Quigan and National Safe Transit, on the use of the imprinted label on a trial basis, became a matter of history. In January, 1958, two Fedders-Quigan plants, one in Buffalo, N. Y., and the other at Maspeth, L. I., rolled NST imprint-labeled packaged air conditioners off their assembly lines for the first time. With this action, a new service was available to NST participants.

Under the NST program, the right to use the imprinted label is a prerogative of any certified manufacturer. Attendant upon this prerogative, however, are certain necessary controls.

Coincident with registration as a certified participant in NST is the privilege of using the NST labels. By indicating on the application for certification a desire to use the imprinted label, an imprinted label agreement form will be forwarded.

This agreement form may be had upon request by certified companies not presently using the labels, or those who are using the labels but would like to consider the imprint. Control of imprinting will be an exclusive responsibility of the manufacturer and the National Safe Transit Committee as described in the imprint agreement.

Industry has accepted the NST tests as invaluable to its economy, and even now is recognizing that, profit-wise, testing alone without identification of the packaged product, is only half a loaf. NST offers its new imprinted label to assist in the achievement of industry's goal of increased profits through maximum reduction of damage losses.

Further details on use of the imprinted label and its control may be had by writing the National Safe Transit headquarters, 1145 Nineteenth Street, N.W., Washington 6, D. C.

"Too many American businessmen are spreading gloom and doom faster than a politician can hand out name cards." Charles R. Hook, chairman of Armco Steel Corporation.

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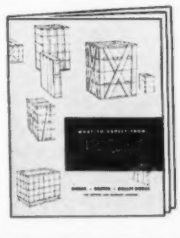

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DAHLSTROM MACHINE WORKS, INC.	69
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YOUNGSTOWN SHEET & TUBE CO.	6

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Box 6-A, Dana Chase Publications, York St. at Park Ave., Elmhurst, Ill.

Supplier News

--➤ *from Page 80*

A period of 264 days, or 7,890,304 man-hours worked, was established without a lost-time accident. The record is the second highest in the history of the steel industry, McClure said.

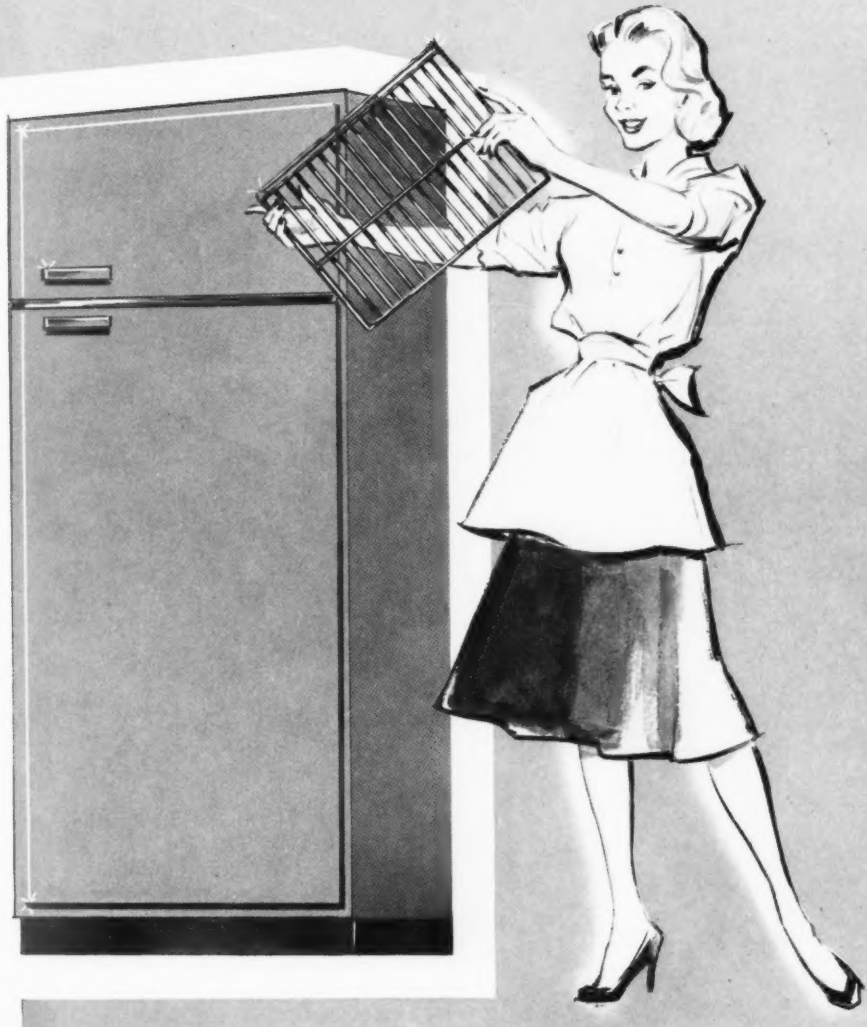
The period stretched from July 31, 1957 to April 21, 1958.

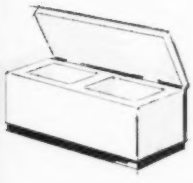
The National Safety Council will present the mill its highest award, the Award of Honor, in recognition of the Achievement.

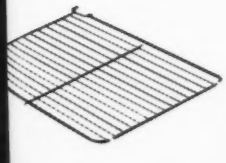
Ross Engineering Breaks Ground for Chicago Office

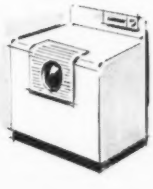
Saxton W. Fletcher, president of the J. O. Ross Engineering Div. of Midland-Ross Corp., wields the first shovel in breaking ground for the company's new suburban Mt. Prospect office building. Others shown participating are (l. to r.): T. A. Lams, president of the Mt. Prospect village board of trustees; G. F. Schuning, Ross sales engineer; R. D. Palm, Midwest machinery sales manager of the John Waldron Corp.; and L. G. Janett, vice president and regional manager of Ross' Chicago office. The new building is expected to be completed this fall.

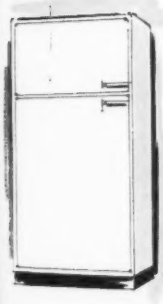
You owe it to her

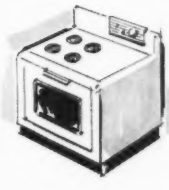












To serve you better... Union Steel's four big, modern plants are at your disposal.

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Naturally—she wants far more than exterior beauty and styling. She also wants the convenience of practical long lasting, easy-to-maintain refrigerator shelving, baskets and other necessary components. For continued satisfaction and repeat purchases she must have the type of product engineering that will guarantee more years of durable, dependable, maintenance-free operation from each working part of her new appliance.

Remember, she's the expert and your best home front salesman, too! Consequently, you just can't afford to compromise quality for price at any point. Your new appliance may call for refrigerator shelving, baskets, trays, freezer components—or oven racks, element frames, side runners—perhaps even grills and guards. Then why not remember the one experienced source for your welded wire components? Union Steel's half-century of leadership in the design, fabrication, 100% inspection and on-time delivery of better, more dependable wire products can be yours at this very moment.

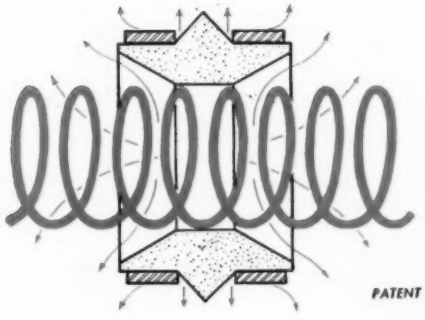
Union Steel's sales-engineering staff is at your disposal. A phone call to ALBION, NAtional 9-2181 will bring an immediate answer to your request.

Where quality is backed by a 50-year tradition

UNION STEEL PRODUCTS CO.

Contract Wire Division — ALBION, MICHIGAN

NEW EXCLUSIVE TEP HEAT DESIGN NOW GIVES YOU LONGER HEATING ELEMENT LIFE, BETTER PERFORMANCE



PATENT PENDING

Cross-sectional view of new TEP insulator and cross-bar design. More space for air circulation assures better heat dissipation, longer wire life.

OTHER TEP HEAT EXCLUSIVES

- FLOATING FRAME CONSTRUCTION — "TEP" patented feature allows unit frame to breathe; flexibility lengthens frame life. Rigidly welded frames distort, or welds break.
- SURE-LOCK INSULATOR SUPPORTS — specially designed by "TEP" eliminate dislocating and subsequent electrical failures.
- 14-POINT ASSEMBLY LINE INSPECTION — plus 30 years of experience in electrical heating applications, guarantees quality and well designed units.
- SPECIAL NICKEL PLATING — exclusive "TEP" process assures a chrome-like finish, eliminates corrosion.

TEP products

New, Slotted Cross Bars, Diamond-Shaped Insulators Reduce Heat Build-Up in Critical Zones

Striving always to build better heating elements and improve performance, TEP Engineers have now developed a new, improved method of supporting insulators that insures faster heat dissipation. The experience of TEP Engineers over the years has proven that most heating element failures occur at points where heat is trapped inside the insulators. High temperature build-up in these areas has a direct effect on wire life.

Open Construction Prolongs Wire Life 50%

As illustrated, the new exclusive TEP Insulators are designed with a diamond-shaped cross-section and are mounted and retained in slotted, overlapping cross bars. This provides more space for air circulation through the insulator, assures faster heat dissipation, and increases wire life as much as 50%. In addition, TEP Insulators are made from porosity-controlled Steatite which reduces micro amp leakage by controlling moisture absorption. These and other exclusive TEP Heat features give you longer heating element life and better performance.

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